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TRANSACTIONS

OF THE

Thirty-Ninth Annual Session

OF THE

MEDICAL

SOCIETY OF VIRGINIA

HELD IN

RICHMOND, VIRGINIA

October 20-23, 1908

RESOLVED, That there shall be affixed to the title-page of each edition of the Tranactions a declaration that the Medical Society of Virginia, in publishing papers, does not thereby endorse the views of authors; such endorsement shall only be by vote, to be found in the Minutes of the Session.—PAGE 15, TRANS. 14th SESSION.

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CAPITOL PRINTING COMPANY, RICHMOND, VA.
1909

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Addresses of Officers, Etc.

President—Dr. Stuart McGuire, Richmond, Va.
Vice-Presidents—1st, Dr. O. C. Wright, Jarratt, Va.
2d, Dr. E. T. Brady, Abingdon, Va.
3d, Dr. Reid White, Lexington, Va.
Secretary—Dr. Landon B. Edwards, Richmond, Va.
Treasurer—Dr. R. M. Slaughter, Theological Seminary, Va.
Chairman Executive Council—Dr. W. P. McGuire, Winchester, Va.
Chairman Judiciary Committee—Dr. Lewis C. Bosher, Richmond, Va.
Chairman Membership Committee—Dr. Wm. D. Turner, Smithfield, Va.
Chairman Legislative Committee—Dr. George A. Stover, South Boston, Va.
Delegates to American Medical Association—Drs. Wm. E. Anderson, Farmville, Va.; J. Shelton Horsley, Richmond, Va., and T. C. Firebaugh, Harrisonburg, Va.
Addresses of other Committeemen elected (pages 262, 263).

During the current year, under the new Constitution and By-Laws, One Member of the *Executive Council* from each Congressional District will be nominated at duly called conventions of members of the Medical Society of Virginia residing in the respective districts. During the first meeting of the Fortieth Annual Session, at Roanoke, five additional members from the State-at-large will also be nominated. The President is also to be a member ex-officio of the Executive Council.

THE FORTIETH ANNUAL SESSION.

OF THE

MEDICAL SOCIETY OF VIRGINIA.

Will be held in Roanoke, Va., October 5-8, 1909, of which full announcement will be duly made.

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SEP27 1909
J. F. B.

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Statistical Statement.

Non-Resident Honorary Members on Register, 1907	16	
On Register on adjournment, 1908		16
Resident Honorary Members on Register, 1907	75	
Resident Honorary Members elected, 1908	1	
	76	
Resident Honorary Members died during 1907-1908	1	
On Register on adjournment, 1908		75
Total Honorary Members on adjournment, 1908		91
Active Members on Register, 1907	1417	
Active Members elected, 1908	118	
Active Members reinstated, 1908, because P. O. address learned (Drs. W. O. Pollard and Geo. H. Rose)	2	
Active Members to be accounted for		1537
Died during 1907-1908	23	
Resigned, 1907-1908	11	
Resigned previously, but accidentally omitted (Drs. J. N. Ellis (1906), and R. G. B. Broome (1907)	2	
Elected Resident Honorary Members	1	
Dropped because delinquent, 1908	34	
Dropped because address unknown	2	
Total died, resigned, dropped, etc		73
Active Members on adjournment, 1908		1464
Total Honorary and Active Members on adjournment, 1908		1555

For additional list of Local, County and District Medical Societies in affiliation with Medical Society of Virginia, see *Report of Secretary*, on page 252.

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Delay in the issue of this Volume of Transactions is due to a fire which consumed the building and all the type then set up, during February, 1909, and the necessary delay in the purchase and establishment of a new outfit of type, machinery, resetting type, etc.

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AUG 11

ADDRESS OF THE PRESIDENT.

Correlation of the Physician and the Layman.

By WILLIAM FRANCIS DREWRY, M. D., Petersburg, Va.

Fellow-Members of the Medical Society of Virginia, Ladies and Gentlemen:

"No man," says Carlyle, "is born without ambitious worldly desires." To be the official head of this Society is surely a most laudable aspiration. Conscious, however, of my unworthiness and of my inability to measure up to the standard of my predecessors, it was with painful misgivings that I assumed the duties and responsibilities of this high office. But one thought reconciles me, and that is this: The same generosity that prompted my colleagues to thrust this greatness upon me will perhaps induce them to "pass my imperfections by." Psychology teaches us that it is most difficult to give expression to our deepest emotions. Therefore, gentlemen, I acknowledge, in stereotype phrase, but with profound gratitude, your expression of confidence and partiality.

A British historian once said: "Before you attempt to write on any subject be quite certain that you can say something fresh about it."

As there is nothing original in me but original sin, I dare not hope to tell you anything new. The field has been so well harvested that there is little left even for a gleaner.

Having made my confession, I shall make some discursive remarks on *The Correlation of the Physician and the Layman.*

RECENT ADVANCES IN MEDICINE AND SURGERY.

It is pertinent to insert in this address to the profession and the public some of the more important recent advances in medicine and surgery.

The past thirty years has been the most active period in the acquisition of medical knowledge and medical art. It marks the transformation from the old to the new. It is characterized by the most fruitful endeavor and the most brilliant achievements which have yet been added to the imperishable chronicles of the profession of medicine.

The discovery and the development of the bacterial, or germ, origin of disease, and the application of the newly acquired knowledge, have revolutionized the practice of medicine along many important channels. Between the pathologist and the clinician a closer alliance has been formed, resulting in giving new insight into disease processes. The results of research conducted in laboratories have brought about a more definite solution of difficult problems in place of conjecture, as to the origin and spread of infectious diseases, as exemplified especially in the prevention of tuberculosis, cholera, malaria, yellow fever, plague and other diseases.

Dr. Clouston did not overstate the case when he said: "The sensational triumphs of modern surgery which Lister has brought about by a study of the microbic enemies of mankind, the good effects of anti-serums and the abolition of malaria by killing mosquitoes, are often looked on as miraculous tales of the supernatural rather than as the results of scientific study."

In the past few years, to chloroform and ether have been added local, spinal and other anæsthetics to further illuminate the horizon of surgery and

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to enlarge the scope of its already splendid accomplishments. Among other special advances in surgery may be mentioned the application of anti-sepsis and asepsis; the opsonic diagnosis and treatment; improved operative technique in the management of intra-peritoneal diseases generally and in the digestive tract especially; radical surgery of malignant growths and of the brain and nervous system; development and progress in operative gynecology; direct transfusion of blood by the anastomosis of arteries, and suturing blood vessels, meaning the possibility of exchange of organs. The X-rays and various other electrical appliances for diagnostic and therapeutic purposes in both surgery and medicine have cleared our pathway to the solution of many perplexing problems.

The transformation that has taken place in hospitals of every character indicates an upward tendency. The crude methods of not many years ago have given way, in the evolution of these institutions, to means of investigation more accurate diagnosis and new appliances for proper and scientific treatment. These, with the humane and skillful care of the sick and injured and infirm, have inspired more confidence and practically destroyed public prejudice.

The exigencies of the times have lead to better equipped men for general practice and surgery, as well as for the specialties. Better academic preparation than formerly is now required of the medical matriculate. More emphasis is being put upon the importance of clinical training at the bedside and in surgical demonstration. A more extended and thorough medical curriculum is required, and finally, a test of qualification is made by a State medical examining board. Notwithstanding this advance in the past twenty years, we have not yet reached that desired high standard in either the academic requirements or the medical qualifications for which the better element in the profession and the higher class medical schools are striving. But this is forthcoming.

Viewed from the vantage ground of present achievement, greater things may be expected in the years to come. I am not in accord, however, with that charming optimism which holds out for the future the possibility of the ultimate extinction of disease and a prolonged tenure of human existence. As long as vicious heredity, untoward environment, ignorance, weak and perverted wills exist, disease, infirmity and death will cast their shadows over the pathway of mankind; and just as surely will the end come from sheer old age, which, like a "low-burning flame, flickers and finally goes out."

THE FORWARD MOVEMENT.

To preserve health and to prevent disease are the objects of the great modern science and art of preventive medicine, which is the highest development of our work. A wider knowledge and a more exact application of prophylaxis have become to be recognized as probably the most important features of medicine, surgery, obstetrics and sanitary science. The results have been seen in the improvement of the health of the people, lessening the suffering of the living, saving lives and increasing human happiness. There is witnessed everywhere a general awakening, which is crystallizing in efficient organized efforts, under governmental direction and control.

This great movement to combat the enemies to health consists in efforts to bring about normal living conditions, improve the family and home life, reform and improve the methods of teaching and training children, secure adequate sanitary protection, prevent premature deaths, insure inspection and control of all sources of public water supply, provide proper disposal of sewerage, maintain, wherever needed, efficient quarantine regulations, enact and enforce laws regarding pure food and drugs, establish a general system of vital statistics, etc.

In order to make the efforts of the boards of health, commissioners and other custodians of the people's health, effective, public opinion must be aroused to an intelligent appreciation of the value of preventive measures in the most comprehensive sense. The government, in which lies the power to make laws and enforce proper protection to its citizens, has no higher duty than that of safeguarding their health. To do this ample means is the first

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prerequisite. The next is the employment of well-equipped, thoroughly trained and conscientious public health officials. Means should be provided for the establishment of sanitoria for the tuberculous, and laboratories for research and study into the causes, origin and prevention of various diseases, such as malaria, typhoid fever, tuberculosis, pneumonia, dysentery, epilepsy, insanity, cancer, etc.

Under the leadership of men, with brave spirits, who had the courage and capacity to lead, supported by a progressive public sentiment, and backed by a beneficent and able government, the greatest triumphs of sanitary science in the history of the world have been recently witnessed in the restoration of Cuba and Panama from pestilence and death, and in the sanitary record of Japan in its war with Russia. As other evidences of the results of the application of modern knowledge of sanitary science, we turn to Italy and Greece. The former has been practically reclaimed from the cursed effects of malaria. The latter, the intellectual decadence of whose people is said to have been probably due to malaria, is also being restored to its high place among the intellectual nations of the world.

The International Congress on Tuberculosis, just closed in Washington, was far and away in advance of any movement yet made in this country toward demonstrating the extent and magnitude of the fight against tuberculosis, and how stupendous have been the results in some places, in decreasing the mortality rate from this scourge. The papers and discussions and exhibits at the Congress, were wonderful in their scope and variety, and will most surely spur on to further action by individuals and organized forces. The moving and eloquent story told by some of the speakers was truly inspiring. Whether the question of the unity of the human and bovine bacilli was settled or not, the startling fact remains that, upon a fair esimate, there are in this country from 140,000 to 160,000 deaths a year from tuberculosis, and that 5,000,000 of our people, according to Professor Fisher, of Yale University, are doomed to death by this disease, and that the cost, estimated in money, to the people is more than a billion dollars a year. Does not this demand the united efforts of the medical profession, the public and the governments everywhere?

Our own Society should, at this session, inaugurate a movement for a general State Anti-Tuberculosis Association. This matter will probably be formally introduced for your consideration.

INSANITY: ITS STUDY, PREVENTION, ETC.

We have not yet attained that state of knowledge, and never will, when we can prescribe conditions which would absolutely insure brain health, yet we know enough to enable us to improve mental life, and prevent, to a great extent, mental deterioration or destruction. The most valuable asset of mankind is a strong and healthy mind. It would, therefore, seem proper that we should arouse a discontent, with a view of encouraging inquiry into conditions unfavorable to sound mental health.

The alienist and the metaphysician should no longer be left alone to work out the problems of mental alienation. If the family physician were more familiar with the early manifestation of abnormal mind many a homicide or other crime or suicide would be averted, and many cases of insanity prevented from going on to a chronic condition or to incurable dementia.

It cannot be overlooked that instruction in psychiatry has been inadequate, so far as many of our medical schools are concerned. "The most urgent need of medical education in America to-day," says Dr. Welch, "is the Psychopathic Clinic, where medical students, and physicians as well, may benefit by instruction in pyychiatry, and whose scientific research into the causes and cure of insanity may be carried out unceasingly."

The psychopathic ward, or hospital and clinic, is already a realization in many of the university towns of Europe, as well as in several States of this country. It is worthy of note, and should be of special interest to physicians of this State, that there will soon be established in connection with the Johns Hopkins Hospital a model psychiatric clinic, and a professorship in psychiatry,

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to meet the demands of modern research and teaching in this much neglected branch of medical study. The selection of Dr. Adolf Meyer, alienist, pathologist, investigator and teacher, to inaugurate and develop this new move is sufficient guarantee of its success.

The far-reaching practical importance of this matter is such that it cannot be much longer evaded in this State. Whether such an institution as indicated should be developed in connection with a medical school, as part of the general hospital—in the form of properly equipped psychopathic wards—as a distinct State institution, or as a special feature of the existing State hospital service, is a matter that requires careful consideration. The last seems to be the most feasible.

There exists in the public mind much of the insoluble mysticism prevalent among our not very remote ancestors, who regarded insanity and, in fact, diseases generally, as an inscrutable visitation of Providence as punishment for misdeeds. The people should be given a better understanding of the real nature of insanity and educated out of traditional prejudice against the hospital for the insane. There is still a widespread impression that the insane patient must remain at home until he is "ripe for the asylum," that is, incurable, generally. "The asylum," says Maudsley, "is too often regarded rather as a burying-ground for ruined minds than a hospital for the cure of brain diseases." Away with this cant about the stigma of being adjudged insane. Better seek the early removal of what produces the stigma. Says Professor Clifford Allbutt: "The stigma, if such there be, lies in the misfortune itself, and not in the red tape of the proceedings." Nevertheless, voluntary admission to hospitals has many decided advantages in cases of incipient insanity.

There should be a united effort on the part of physicians and the intelligent laity to bring about that popular sentiment that would demand for our insane, epileptics and feeble-minded, the best care and treatment the financial condition of the State could possibly afford.

It is to prevention, however, rather than to cure that we must look to the diminution in insanity. Indeed, psychiatry should play an important role in preventive medicine of the future. Heredity, improper training in childhood, unhealthy environment and bad living methods, together with alcohol, certain constitutional disease, the effects of vice, are responsible for a large proportion of the cases of insanity and mental defect.

As a predisposing cause, heredity can be traced to between twenty and fifty per cent. of cases. "The fathers have eaten sour grapes and the children's teeth are set on edge," is a doctrine that cannot be ignored. As Dr. Henry M. Hurd, a distinguished alienist, tells us: "The knowledge should become universal that every individual represents the sum total of the vices and virtues, faults and perfections, strength and weaknesses of his remote ancestors, plus special morbid conditions or otherwise, which existed among his immediate progenitors."

The first step, then, in our efforts to reduce insanity and mental defectiveness is by their non-production. Should State medicine longer withhold its influence from this great problem of adopting rational principles of natural and sexual selection in the propagation of our species? "Should not the State take cognizance of these things, which are more insidious and equally, if not more destructive or damaging to the race, than all infectious diseases combined?" Let physicians in their professional capacity teach parents and children of the almost certain mental, or physical, or moral degeneracy in the offspring resulting from the union of two stocks already tainted with insanity, epilepsy, alcoholism, certain constitutional and other transmissible degenerating diseases and defects. Let the State enact prohibitive laws, with the view of protecting the race from disastrous diseases and invalidism.

While heredity is important as a predisposing etiological factor, it is not necessarily true that the offspring of the insane, the epileptic or the mentally defective are bound to follow in the footsteps of their diseased parents or grandparents. In a very large measure this tendency can be controlled by the individual. Proper living, healthy environment, personal hygienic habits, nourishing food, attention to bodily functions, abundance of fresh air and

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sunlight, sufficient rest, sleep and physical exercise, mental recreation, and avoidance of prolonged overwork and stress, will usually outweigh even the direful effects of a bad heredity. Our brains are, after all, largely what we make them.

Need I call attention to the significance of alcoholism in its relation to insanity and degenerative processes of the organ of mind, as either cause or effect? This is a question which belongs largely in the province of scientific medicine. The pernicious influence that alcohol, opium and cocaine exercise on the physical, intellectual and moral spheres of life, cannot be controverted. A further, more thorough and impartial examination should be made regarding the alcohol question, and then the public should be given, in the plainest possible terms, definite answer to this most perplexing question: What real part does alcohol play as a medicine, as a poison, as a food, as a narcotic and motor depressant, or other effect, or as a deterrent to the development of the race?

From a practical and from a scientific standpoint as well, it would, at least, seem that the confirmed inebriate is a proper subject for control and medical treatment, both for the good of himself and that of his family and the community. He should be committed to an institution of the farm-colony type in which his remaining abilities could be utilized to some good purposes. Many cases could thus be restored to useful citizenship.

As a prophylactic, as well as humane, measure, there needs to be a more careful medical study of the sojourners in our reformatories and prisons. Many of these are moral delinquents, or mental degenerates, many inebriates, some actually insane. It would be better for the community and the future of our race if many of these, especially the habitual criminal, who are now sent from the prisons, were permanently segregated. We may confidently look to the State Board of Charities and Correction, recently established in this State, for valuable suggestion along this line of work. An excellent provision in the law creating this new department is that requiring that a physician—a member of the local board of health—be on the local auxiliary board of inspectors of jails and almshouses.

SUICIDE.

Suicide is another difficult problem confronting both the laity and the medical profession, which in recent years has rapidly assumed ominous proportions. In a recent magazine article, from an authoritative source, it was stated that, in 1881, the total number of suicides in this country was 605, or, at the rate of 12 per 1,000,000 of the population. Last year the number had risen to 10,782, or, at the rate of 126 per 1,000,000 of the population. During the past eighteen years 120,000 suicides have been reported in this country.

No satisfactory theory as to the causes of this great increase has been given. But doubtless much depends upon these factors: Faulty early education and training, a bad heredity, effects of excessive use of alcohol and narcotic drugs, over-indulgence in the various dissipations of the times, stress and anxiety incident to the rush after wealth and worldly success, a moral cowardice and an unwillingness to carry an extra share of burden, apparent or real.

A study of the causes of suicide often reveals a pre-existing brain disturbance, which culminates in an overpowering morbid impulse to "shuffle off this mortal coil," yet in many cases there has been no ascertainable morbid predisposition or other evidences of an unbalanced mind. Occasionally one guilty of a capital offense or otherwise transgressing the law, may probably resort to suicide rather than face the inevitable consequences of crime.

It has been claimed, and, with good reasoning, that the influence of suggestion, due to the reading of details of suicide, published in the newspapers, is an important etiological factor. Certainly the imitative element has often been observed in persons mentally weak. An attempt at suicide by one patient in a hospital for the insane is usually followed by similar attempts by other patients.

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EXPERT TESTIMONY.

My time is too limited to admit of more than a brief mention of another important subject which has of late been so much in the public mind: Insanity as a defense in criminal cases. The impression seems to be generally prevalent that all insanity experts are "for hire" to the "highest bidder." This is a gross injustice to those alienists who are capable and honest. That there are dishonest medical witnesses, as there are shyster lawyers and corrupt jurors, no one will deny; but should the entire company be judged by one unprincipled fellow? People who know absolutely nothing about insanity or the intricate workings of man's mind, normal or abnormal, are ready to join in the wholesale criticism of the opinion of any and all experts. Often the opinion of a competent alienist is essential to truth and justice. Unfortunately, we sometimes see in the witness chair unscrupulous fellows, posing as experts—men whose only purpose is to get a fee or to aid the lawyer in winning the case for "their side," regardless of the scientific truth, or else men whose lack of training or experience unqualifies them for the important role which they assume.

Every precaution should be exercised to prevent the insanity plea from being abused, and thereby giving the real criminal undeserved protection. Nevertheless, it is entirely in line of modern progress in forensic medical to have every one charged with crime, in which there is reasonable doubt about his mental condition, examined by fair and competent experts.

This matter is of such vital importance that our laws and practices should be amended, so as to put it in the power of, and to make it the duty of, the court to name the experts instead of having them selected by the defense or the prosecution. The witnesses thus called should, of course, be subjected to cross-examination by both sides in the case. This would at least prevent the possibility of the expert being partisan, which he should never be. Another plan which appeals to me is to have the court appoint a commission of experts whose duty it would be to examine and study the case in question and report its opinion to the court. The report should be open to both the prosecution and the defense, and, if desired, used in evidence. A correct solution would in this way usually be quickly reached.

In at least two or three States it has been recommended that the organized medical associations furnish the courts a list of names of members of the profession, from which an expert, or experts, may be selected, as required. The expert should always be paid out of the public treasury, and his compensation should be a fair one. At all events, I trust that this Society and the Virginia Bar Association will take up this matter jointly and recommend to the Legislature a bill looking to the solution of this difficult problem.

PROTECTION OF CHILDREN'S HEALTH.

An important causative factor in the increase of nervousness and insanity is to be found in our faulty educational methods. The subject of overwork of school children at a tender age, and often under unhygienic condition both in respect to person and environment and during the critical period of puberty and adolescence is a serious one. It calls for the most careful consideration by the medical profession. Parents and teachers should be warned against the everlasting strain under which young children are constantly laboring to keep up with the prescribed course of study in our schools; particularly those children whose health is already in jeopardy from unfavorable heredity.

One of the greatest needs of the hour is a more extensive and systematic medical examination of all school children, especially those who show any evidence of physical or mental weakness or defect. Instead of the irregular, haphazard methods that usually prevail—each city or county doing the work in its own way and in its own time—there should be a well-organized authoritative power to direct intelligent efforts towards definite ends. Many cases of insanity and nervous breakdown in adult life can be traced directly to the school room. City and county school boards would do well to have medical

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members, whose advice and suggestions in sanitary and hygienic matters and in the physical and mental condition of the pupils would be of inestimable value.

There is a class of children for which I make a special plea. It is the really feeble-minded. The well-to-do may employ trained teachers or send their mentally defective children to special schools. The less fortunate poor having no such advantage, their mentally deficient children have to remain at home, untaught and neglected, to grow up in intellectual darkness, doomed to a life of inutility.

Both as humanitarians and scientists, physicians should unite with the intelligent non-professional public in urging suitable instructions for the mentally abnormal children, in separate classes, auxiliary schools attached to the ordinary schools, or, perhaps, in special institutions. Such children "don't know where they are going," but we know that "they are on their way"—to hopeless degeneracy, or to become objects of public care. It is a duty we owe the rising and future generations to develop the physical as well as the intellectual and the moral attributes of children. The responsibility of furnishing for the future a vigorous, brainy, high-minded and moral manhood and womanhood cannot be shirked by those of this generation.

EDUCATION OF THE PUBLIC IN MEDICINE.

Educated and trained in the science and art of medicine, qualified to appreciate the causes of disease and the means of prevention, the physician owes it to himself, his profession and the State, to educate public opinion in the direction of the promotion and the development of means for relieving human suffering. It is his paramount duty to teach the people in matters pertaining to the preservation of their health in order that they may be happy and useful citizens.

Dr. Joseph D. Bryant, recently President of the American Medical Association, enunciates a sound doctrine in these words: "Those physicians who regard the practice of medicine as a business enterprise should class themselves as brokers in a market of human affliction." The profession of medicine is essentially altruistic in character. Yet there is no reason that the physician should not apply conservative business principles in the conduct of his practice and have a proper estimate of the value of his professional services. The people should learn to discriminate between the value of the service of a high-grade, competent doctor and that of the "cheap commodity."

The public should be given, as far as practicable, a proper understanding of our work and our progress, our purposes and our aims; of their needs and our ability to supply them. We owe it to the great science we represent to be frank and open in all our dealings with others, carrying always a cheerful spirit. As Dr. William S. Thayer says: "The physician has no higher public duties than the duty of simplicity, the duty of the avoidance of mystery in medicine and the duty of truthfulness. Towards his patients I know of no more vital duty than the duty of optimism." There must be, however, a responsive and intelligent co-operation between the people and the medical profession. It is in this way only that we gather strength to direct and carry into successful operation measures for the betterment of the health of the people.

In his inaugural address before the American Medical Association this year, Dr. Herbert L. Burrell emphasized the following agencies by which the public should be educated in medicine: First, judiciously edited newspaper articles, authorized by a responsible board of medical men; second, magazine articles written by skilled lay writers, inspired by medical men of sound knowledge and discretion; third, free public lectures by men who are authorities in their subjects; fourth, individual teaching by the family physician. The last, he regards, as the most potent agency of all.

MEDICAL LEGISLATION.

It is a solemn duty of physicians to take a special interest, yes, the initiative, in medical legislation. They should fearlessly advocate needed reforms and point the way to the creation of the necessary agencies having

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for their aims the prevention and the cure of disease and the advance of medical science. Legislatures, being composed largely of men untrained in the consideration of such subjects, need to be frankly and intelligently informed by competent physicians. While we have not always impressed the law-makers sufficiently to get through all the legislation we desire, we have, nevertheless, succeeded to a measurable degree. Let us not lose patience or become discouraged, but, with a strong will and a united force, continue our efforts. Be earnest and active. The loss of many a good cause has been due to disastrous inactivity.

I have found that the Virginia legislators have been, with comparatively few exceptions, gentlemen whose aims were for the welfare of the community. It is seldom that men in political or public life are not influenced by sound argument and open to conviction, certainly when approached in a tactful, judicious manner by an earnest, conscientious advocate. Someone has truthfully said that "the vehemence which we are too apt to display only excites the sensitiveness of the legislator—and when passion enters in reason passes out of the door."

In order that we may go before the Legislature of 1910 with the strongest possible backing and show of success, I would suggest that, at this session of our Society, the incoming president appoint special committees, whose duty it shall be to co-operate with and aid our legislative committee in studying the situation and the apparent needs and getting into line for good work. At our next session we should analyze the recommendations of such committees, and give united support to whatever, in the judgment of the Society, may seem proper. And then bills should be properly drawn and presented early in the session.

The subjects which seem to me to be worthy of such consideration are:

1. The physician's license tax, a matter about which we have already spoken in no uncertain tone.

2. Amendments to the medical practice acts; adequate protection of a credulous public against the pernicious practice of quack fleecers.

3. Prevention of the manufacture and sale of impure, adulterated drugs, and the regulation of the "patent" and proprietary medicine business.

4. Further restriction of the selling or distribution of cocaine and opium or "remedies" containing them, or other poisonous drugs.

5. Further improvement in laws relating to public health organizations; the systematic registration of all births and deaths; increase of the funds to be expended by the State Board of Health in the excellent work already begun.

6. The establishment of sanitoria for consumptives; an institution for the feeble-minded; a colony for epileptics, and probably one for inebriates.

7. Uniform medical examination of school children; the teaching and the practical application of school hygiene; special schools or classes for the teaching of backward children.

8. Statutory prohibition or regulation of the marriage of the unfit, the imbecile and other defectives.

9. Revision of laws regulating expert testimony, and examination and commitment of and special provision for the criminal insane.

If nothing else were accomplished, we would gain from study and investigation a far more comprehensive understanding of these subjects than we now have, which would lead to concert of action and place us upon a higher plane.

MEDICAL ORGANIZATION.

The most profitable attainment of the medical profession, both as regards its own progress and welfare, and its usefulness and influence in the community, is a broad-gauged, strong organization. The fundamental objects of a medical society should be to encourage professional attainments, to "inculcate a high sense of professional honor," and a proper appreciation of ethical conduct, and to cultivate good fellowship and professional brotherhood.

Safeguarded by pure personal character, and the "highest motives of

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professional purposes and of public welfare," we can keep ourselves immune from even suspicion of questionable conduct or of selfish and commercial purposes.

Organized nearly forty years ago by ninety-one progressive, public-spirited doctors, the Medical Society of Virginia has grown, till now the membership roll has reached over 1,500. There are only a few reputable "regular" physicians in the State who are not connected with this Association. Its potential and uplifting influence has been largely instrumental in bringing up to its present height the standard of medical qualification in the State, the elevation of medical knowledge, and in pressing on to higher professional ideals and accomplishments, and in creating more general public confidence in the science and art of medicine.

Each county and city of the State should have a local organization which should be in affiliation with the parent Society. There are now only thirty-five city, county and district medical societies in the State. There should be many more. There should be co-operation and co-ordination of all our forces. Individuals and organizations should unite in earnest efforts for the upbuilding of the profession everywhere.

Some day we should commemorate in a fitting manner the work of those pioneers in medical organization in this State, nearly all of whom have gone to their reward. But, my colleagues,

"God be thanked that the dead have left still
Good undone for the living to do—
Still some aim for the heart and the will
And the soul of a man to pursue."

With this session our new or revised Constitution and By-Laws go actively into operation. Let us, gentlemen, give our "new instrument" a fair test, and then, as occasion arises, make such alterations as may seem desirable to serve the best interest of the Society and the profession of the State. Changes were made with the view that the affairs of the Society may be conducted more nearly in accordance with the modern methodical way prevailing in similar organizations; that, by a more widespread representation in the official management, more personal interest would be manifested; and that, by a large representative committee, the Executive Council, composed of sixteen members from different sections of the State, putting into proper shape all business matters before they are submitted for final action by the Society, and the nomination to the Society of officers and committees, more time would be had for scientific papers and discussions.

Perhaps there should be some amendments to the new Constitution and By-Laws. Unless, though, their adoption be urgent, it seems to me that it would be the part of wisdom to refer all such propositions to the Executive Council, with instructions to thoroughly investigate and report recommendations at our next annual session. This would give ample time for reflection by every member of the Society, many of whom cannot attend this session.

The matters that should probably be considered are:

1. The publication of the entire transactions, including papers and discussions in full, in bound volume. Whether the large amount annually expended for this purpose results in practical value, is a question that should be carefully looked into.

2. The permanency of a place or places of the annual sessions in the larger cities; the establishment of a fixed home and a library. It is time that we were collecting and storing away in some systematic method the writings of our own physicians and surgeons, and also establishing a circulating and reference library.

3. The division of the Society, at annual sessions, into sections, probably medical and surgical, in order to get through with the program of papers in a satisfactory manner.

4. The establishment of a fund to be used in the encouragement of original research, and probably efforts along other lines in the direction of the uplift of the science of medicine in the State.

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5. The question of the finances of the Society also needs to be considered, and, if practicable, some plan devised by which the everlasting stringency in our treasury department may be relieved.

In the words of an eminent physician, "Despite the fact that we are all human and possess our fair share of human frailties, we are, with singularly few exceptions, all working earnestly, as best we can, in the search of truth and for the good of humanity."

Let us continue to work onward and upward, striving ever to add to what we have already accomplished, for "every day and all day long the process goes on—a death of error, a development of truth." Take hope, for, in the words of a great statesman, "we are rising steadily to plains higher than we have yet known."

Each of us is needed in the firing line. Be not only urgers of reforms wherever needed, but doers of the work. Let us not only create a "storm of current which clears the atmosphere, but be the trade wind which carries to port the freighted ship of a people's hope."

REPORTS OF CLINICAL CASES.

(No Report to occupy more than five minutes.)

Rheumatoid Arthritis.

DR. J. E. PHILLIPS, *Suffolk, Va.*, brought the patient (male), aged fifty-seven years, before the Society. Early years spent on farm; in school; study of medicine, which he practiced for five years. Was then in a drug store for thirty years. Was always prudent and temperate in all things save eating, in which respect he was rather over-indulgent.

Family history: Cancer, tuberculosis and glandular affection on maternal side, practically all having suffered more or less with joint trouble. Mother had rheumatic trouble, and cystitis late in life, from which latter death probably resulted. Father died of chronic bronchitis.

The patient presented himself for examination on October 20, 1905. Up to that time had been in excellent health, except that in the spring of 1903, muscular soreness and the so-called rheumatic twinges began to develop. The joint of the right great toe became red, swollen, and extremely painful, and soon afterwards the left great toe became involved. From this he made a fairly good recovery. Through the summer of 1903 the patient did very well, except that, late in the summer, he seemed weak and pale. During the following winter he began to develop trouble in his fingers. The trouble was progressive, until, at the end of twelve months, practically every joint was involved, including the temporo-maxillary. The involvement of this joint is characteristic of rheumatoid arthritis or arthritis deformans, and does not occur in articular rheumatism. The trouble, though progressive, was not acutely inflammatory. The summer of 1904 was fairly comfortable. In the winter of 1905, especially in March and April, the patient's locomotion became difficult, and there was loss of flesh and strength.

Having been a physician and a druggist, the patient had been treating himself with everything that he thought good for his trouble. In April, 1905, he took a trip to the Hot Springs, where he stayed six weeks, his general condition becoming worse, though relieved somewhat of pain. After his return there was a steady decline in flesh and strength, and he was forced to give up business. At this time there was marked enlargement of the joints. The teeth were in fairly good condition, the breath was also pure, and the quantity of urine good. The temperature went to 100°. The patient was very anemic, and the temperature seemed to be that of anemia. No blood examination was made at that time. Upon examination of the heart, the organ was found to have healthy sound, both sounds being somewhat accentuated. The tension was high.

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Dr. Phillips called attention to the fact that the family history was scrofulous or strumous; the peculiar shape of the fingers; that there was no acute inflammatory condition; that the temporo-maxillary joints were involved, and that the patient was anemic.

The patient was placed under a reconstructive treatment. A slight gain in weight followed, though the joints were enormously swollen, the limbs tender, the appearance bad, and the patient very weak. He was kept in bed nearly all the time until spring, and showed improvement on tonics, massage, and such treatment as he could get at home. The patient was advised to come to Richmond and put himself under the care of Dr. Walton for electro-therapeutic treatment, baths, massage, etc. He did so. When he came here he could not walk; he can now walk fourteen or fifteen blocks, has gained twenty-six pounds, has no pain, and is doing well.

Rheumatoid Arthritis.

Dr. J. C. Walton, *Richmond, Va.*, stated that a patient presented himself on the 1st of July in a weak, anemic condition, confined to an invalid chair. He was given tonic and reconstructive treatment. Improvement was progressive and marked.

Rheumatoid arthritis or arthritis deformans is often confounded with chronic rheumatism, and though both of the conditions are sometimes present in the same subject, as a rule, they are entirely distinct. Rheumatoid arthritis is frequently accompanied by the strumous diathesis. In the family of this patient all the brunettes had rheumatoid arthritis, and all the blondes had tuberculosis. Frequently you find the patient strumous, and whether you do or not, you may well be solicitous of its presence.

These patients have to be fed. It is a question of nutrition, tonics, out-door life, and physical therapeutics. Much can be done to relieve and restore them to health.

Dr. Walton stated that the main point he wished to impress was the importance of making a careful diagnosis between arthritis deformans and chronic rheumatism, one characteristic of the former being involvement of the temporo-maxillary joint, which is never found in articular rheumatism. The general health of the patient is usually impaired. Dr. Walton cautioned against the mistake of treating cases of rheumatoid arthritis with rheumatic diet and medication.

Fracture of the Femur.

Dr. Charles S. Webb, *Bowling Green, Va.*, reported three cases: First, a child about three years old. A plaster bandage was used; second, a girl of about eleven years; third, a young man of about twenty-one.

All got well without a particle of shortening by the most accurate measurements. According to most text-books, fractures of the femur rarely get well without some shortening. One author states that he had never seen a case get well without some shortening, and he regarded one-half to one inch as a splendid result.

Dr. Webb treats these cases with a combination of the long splint and weight and pulley. The splint reaches from just beneath the arm-pit to from four to six inches beyond the foot, with an upright piece at the foot extending about two inches below. The foot of the patient is about six inches from this lower piece. A hole is bored through this foot-piece, and another through the foot of the bed, and an ordinary pulley and weights applied. The weights must be exactly right. Just enough weight should be used to get a good pull, but not enough to cause discomfort to the patient.

Operating in Appendicitis.

Dr. Charles S. Webb, *Bowling Green, Va.*, referring to the discussion at the last meeting of the Society at Chase City in regard to the medical and surgical treatment of appendicitis, stated that at that time he called attention to perhaps a dozen cases of appendicitis he had treated medically. He reported two typical cases since that time in which he gave the patients their choice, telling them that 80 per cent. of cases got well under medical

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treatment and 98 per cent. under surgical treatment. They both elected to be treated medically, and are perfectly well today, having had no recurrence.

Cancer.

DR. A. L. TYNES, *Fisherville, Va.*, referring to his statistical report of cancer cases, made at the last meeting of the Society, stated that he had recently lost another case of cancer of the stomach. The patient, a negro woman, had been serving the family of Mrs. B. for a number of years. The point emphasized by Dr. Tynes was that Mrs. B., two years ago, died of cancer. The patient had been living all the time within 300 yards of Mrs. B.

Exactly one mile from the negro woman Dr. Tynes has another patient, a woman, suffering from an abdominal tumor, immovable, very hard, and tender. She has recently lost forty or fifty pounds in weight, and is going downhill very rapidly. A positive diagnosis of cancer has not been made. The patient is quite old. The negro woman who has just died was a servant in the family of Mrs. B. and of this present patient, going from one to the other, but in the employment of one or the other nearly every week for twenty years. Both Mrs. B. and the negro woman died of cancer, and this third woman is now affected with a disease which is probably cancer. Dr. Tynes mentioned these cases hoping that physicians would favor him with reports of other cases.

Cancer.

DR. L. G. PEDIGO, *Roanoke, Va.*, discussing the contagiousness of cancer, referred to a case a few years ago of Dr. Burnette. It was a question whether it was a case of contagion or the accidental grafting of a piece of cancerous tissue into a wound. The doctor had cauterized a cancer on the tip of the tongue of a patient, and had pressed the material on with his finger. Immediately afterward he shaved, and cutting himself slightly, staunched the blood with the same finger, which had not been cleansed. The wound did not heal kindly, and pretty soon a growth developed. Dr. Burnette's patient died of cancer, and pretty soon afterwards he, too, died of cancer. His case was inoperable on account of the blood vessels of the neck. When he died it was spoken of as a case of contagion, but there is a question whether cancerous tissue was not engrafted into the wound.

Raynaud's Disease.

DR. J. C. WALTON, *Richmond, Va.*, reported the only case of Raynaud's disease he had ever treated. A lady of refinement and culture presented the following symptoms: She came to the office Sunday morning, having passed only one pint of urine since the preceding Tuesday. The circulation was very poor. In this condition one or more of the toes, and sometimes the fingers, ears and nose become cold, hard, the circulation becomes bad, and the skin discolored. In this case, three of the patient's toes of one foot became purple, cold and painful three years ago at the birth of her first child. Two years later, at the birth of another child, the same condition occurred in the opposite foot. The pathology of the disease is rather obscure, but it is thought to be some vaso-motor trouble. Along with the disease was marked psoriasis.

The patient was under my care for nine weeks and experienced great relief of her symptoms. The toes lost the purple color and became warm. The psoriasis was entirely cured at the end of the ninth week, and the patient refusing to stay longer for treatment, went home. The case is not well, but wonderfully improved. The treatment was hydro-therapy, photo-therapy and massage.

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Raynaud's Disease.

DR. J. E. COPELAND, *Round Hill, Va.*, reported a case of Raynard's disease in a lady forty years of age. Her limb and toes were involved. The treatment was iodide of potash, 15-20 minims of Lugol's solution. The patient recovered. It was the only case of Raynaud's disease Dr. Copeland had ever seen, but it presented all the symptoms to which Dr. Walton referred, though there was no psoriasis.

Chronic Parenchymatous Bright's Disease.

DR. MARK W. PEYSER, *Richmond, Va.*, reported the case of a woman, seventy-five years of age, the wife of a physician. She had been complaining for a number of years. Her custom had been to go to her attending physician when she felt badly. Examination revealed chronic Bright's disease. She had the ordinary symptoms; the ordinary treatment was pursued, and was succeeded by the ordinary results. Dr. Peyser finally suggested the use of static electricity. He had never treated a case in this way, and did not believe it could do any good in this case, except, perhaps, to produce a feeling of well-being. Two months later, after twenty-one treatments, the patient had recovered so far as could be determined by microscopic and chemical examination of the urine. That was about two years ago. Systematic examination of the urine every month shows it still to be free from albumin and casts. The patient, of course, has the natural debility of old age, but as far as the kidneys are concerned, is evidently in very good health.

The treatment consisted of the static wave applied to the kidneys at every alternate treatment, the negative head breeze being used at other times. The patient took no medicine whatever during the electrical treatment, and the conclusion must be that the electricity produced the cure.

Anasarca.

DR. MARK W. PEYSER, *Richmond, Va.*, reported another case referred to him, a man, blind since his ninth year. The patient was in a condition of anasarca. He was treated by electricity, taking ten treatments, at which time, being very nervous and fearful, he discontinued the treatment and went home. So far as could be seen, there was no effect whatever. The attendant physician stated, however, about two months later that under further medication the anasarca had been reduced to a great extent, though there were still casts and albumin in the urine. If the patient had not allowed his fear to overcome him, Dr. Peyser believes the results would have been very good in this case also.

SYMPOSIUM ON ANESTHETICS.

The Physiological Action of Anesthetics.*

By A. B. GREINER, M. D., Rural Retreat, Va.

By anæsthesia we understand the complete or nearly complete loss, temporary or permanent, of the power of sensation. This loss of sensation may be general throughout the body or may be confined to any part of it. It may involve either tactile sensibility, the special sensibility of an individual organ, or any kind of perceptive faculty. Anæsthesia may be due to disease or to injury or to the action of drugs. Disease of a nerve trunk will produce total or partial loss of tactile sensibility throughout the area supplied

*Read, by request of author, by Dr. J. E. Warinner, Richmond, Va., R. F. D., No. 7.

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by that nerve, and disease of the central nervous system will produce a similar result. Injury severe enough to destroy the central nervous mechanism will likewise cause anæsthesia more or less general. While anæsthesia produced by disease or injury is a symptom of great value in the general makeup of pathological cases, yet it is anæsthesia produced by drugs with which we are chiefly concerned. Disease and injury produce loss of tactile sensibility as a pathological entity, while the physiological entity produced by drugs known as anæsthetics is the subject of our investigation. We need no Pythagoras, Hippocrates or Galen to stand today in our midst and depict the scenes of intense suffering and torture to which unfortunates were necessarily subjected during the pre-anæsthetic days. Anæsthetic drugs were discovered and an efficient way to make use of them; then the curtain was lifted on scenes the perfect antithesis of those that had been.

So many accidents and fatalities, and yet so few, comparatively, have occurred since the introduction of anæsthetics that the physiological action of them should as far as possible be understood so that intelligence in their use may be shown, and wisdom in combating their evil effects.

Anæsthetics are divided into two general classes, general and local. Tactile sensibility is due to an intact nervous system, and nerve tissue owes its functionating power largely to its inherent mechanism, but chiefly to proper nutrition. The current of blood is the great feeder of all tissues of the human system, and it carries gaseous bodies as well as solid bodies for the nourishment of every tissue according to its needs. On the presence or absence in the blood of the element oxygen, and therefore its presence or absence in the tissues, depends entirely the condition of consciousness or unconsciousness, of æsthesia or anæsthesia.

Deprive absolutely the body of oxygen and it becomes first anæsthetic and then dies. Supply oxygen in proper quantity and proportion and the anæsthesia gives place to a return of consciousness and tactile sensibility.

We may then rightly conclude that the condition of anæsthesia is due to an absence or diminished quantity of oxygen in the use of the so-called general anæsthetics. But while this as a general statement is true, yet there are inherent qualities in these agents that lend very materially to the anæsthetic state. The vapor of any agent devoid of oxygen would likewise be anæsthetic. The vapor of any agent in which there is the element oxygen in combination will be anæsthetic if such combination is so close that the oxygen cannot be separated for use in the economy.

The reason that other vapors than those now used are not in use for the production of anæsthesia is because they are more productive of deleterious effects and also for the reason that they may lack anæsthetic qualities in themselves; therefore reliance is placed upon those whose after effects are least harmful and most fleeting, and whose anæsthetic qualities are greatest in comparison.

Carbonic anhydride as a medicinal agent is never administered as an anæsthetic, yet it is carbonic acid narcosis, as the end result of the inhalation of anæsthetics, which produces the loss of sensation. In brief, we may say that the anæsthetic vapors are nothing more than substitutes for oxygen for a limited length of time, and because they lack the properties of oxygen they cannot support life, and if inhaled for a great length of time will produce death. It is true that there is in carbonic acid gas the important element oxygen, but in such close combination chemically that it cannot be utilized by the blood current and tissues, and therefore is eliminated through the respiratory tract as the representative of destructive metamorphosis. Ether as an anæsthetic is well known to be safer and slower in its effect than chloroform, because it contains in its chemical composition the element oxygen, which is more or less easily separated from the ethylic radicle, and it is therefore taken up by the blood and utilized by the nerve centers. This being the case anæsthesia from the use of ether is greatly preferred when its effects are compared to those of chloroform. Because of this action of oxygen in the composition of ether it is required that no air containing oxygen be administered while ether is being given, for the anæsthetic state would be greatly deferred and probably not produced at all. The oxygen in the ethyl oxide is sufficient to keep alive the vital spark and yet not

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sufficient to interfere with the loss of tactile sensibility. Ether or some other oxygen-containing agent, where the oxygen is in loose chemical combination, should be regarded as the ideal anæsthetic. The vapor of chloroform contains no oxygen, and therefore the necessity of oxygen-containing air being administered at the same time. The reason for the profound anæsthesia produced by chloroform, and the necessity for the simultaneous administration of air containing oxygen, is then very clear.

There has been a great deal of discussion and much diversity of opinion in regard to the essential points in the physiological action of anæsthetics. When applied to the skin, chloroform first produces a tingling and burning sensation, to be followed by a feeling of cold on account of its rapid evaporation, and if the drug be not confined this is practically all the effect produced. If, however, its evaporation be interfered with, the drug will produce a rubefacient effect on the skin, and if the action be prolonged vesication is the result.

But it is with the use of chloroform vapor as an anæsthetic that we are chiefly concerned when we come to consider its physiological action. The mucous membrane of the respiratory tract is much more easily and quickly affected by chloroform than is the skin. Its vapor inhaled produces the sensation of warmth in the mouth, nose and throat, to which the subject gradually becomes accustomed, and then nothing more than the odor of the drug is perceptible to him, even though unconsciousness be not yet produced. On account of the respiratory tract being unaccustomed to the presence of such vapors, there is at first the feeling of suffocation or air hunger; therefore the advisability of permitting the inhalation of a large percentage of air in the beginning of anæsthesia, because chloroform has in its composition no available oxygen to satisfy this need of air. People who are accustomed to a very great degree to inhaling irritating vapors in their industrial occupations usually can inhale with less discomfort the vapor of anæsthetics. Following the feeling of warmth produced by the vapor there comes by almost insensible gradations the state of relaxation and finally of complete anæsthesia as far as tactile sensibility goes, and such a condition is all that is desired. As the administration of the vapor proceeds there is a gradual accumulation of carbonic acid gas in the circulation. The carbon is the product of the tissues, and the oxygen coming in contact produces this gas, which should be exhaled. On account of the diminished supply of oxygen katabolism progresses more slowly, and there is an accumulation of waste products in the body, the presence of which obtunds the nervous system and produces the anæsthetic state. The pulse may be a little stronger and have more volume than ordinary during the first few inhalations of the vapor, but this condition is soon superseded by a weakened and more rapid pulse. It seems, then, that the pneumogastric center is the first to be depressed, and that this inhibition produces the rapidity of the pulse. Just about the same time the respiratory center shows the same inhibition, and the full, deep inspirations gradually give place to the quickened and shallow respirations. With chloroform there is not noticeable any primary arrest of respiration as is so frequently seen in the administration of ether.

A slight dilatation of the pupils is at first noticed, but during anæsthesia they are contracted, and it is usually the case that a subsequent dilatation of the pupils while the subject is completely anæthetized is an indication that the vital centers are in danger of being suddenly overwhelmed. The brain cortex is first affected, after the primary reflex effects have passed off, then the sensory side of the spinal cord, to be followed by the motor tract of the cord. Fortunately the centers in the medulla are the last to be overwhelmed, the sensory parts first and lastly the motor portions, if the anæsthesia be too profound. The motor cells in the medulla, through the motor nerves, govern the respiration and circulation, and so long as these are not too greatly inhibited there is no danger of dissolution. Bear in mind that almost the first effect noticed in the administration of chloroform is one traceable to an inhibiting influence on the circulatory and respiratory centers in the medulla, and it appears that these two nerve centers are influenced reflexly at the very first, and are the very last to be overcome. When inhaled chloroform seems to produce no effect on nerve trunks.

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One center in the medulla which is chiefly affected by the vapor is the vaso-motor, and to the inhibiting influences on this center are due most frequently the fatalities from anæsthesia. Any drug that depresses or inhibits a nerve center causes that center to lose control over its functions. The vaso-motor center, functionating as it should, gives tone to the blood vessels and causes them to contract properly on the volume of blood within them. Remove such control by depression or inhibition of the nerve center which presides and the vessels dilate from lack of tonicity and from the pressure within.

The natural consequence is that all the blood accumulates in the great venous channels, and the heart has nothing with which to perform its function. Keep in mind that the veins can easily contain all the blood in the human body. The failure of the heart is then secondary to failure of the vaso-motor center, and the quickened weak pulse is not due to direct depression of the heart. The respiratory center not being properly supplied with arterial blood, next fails to perform its function, and as a consequence, there is observed failure of respiration as a secondary manifestation. There has been much heated discussion concerning the mode of death in chloroform narcosis, some contending that heart failure is the prime cause, and others, with equally as good argument, still hold to respiratory failure. When we understand clearly the influence of the vaso-motor center over these functions, it appears to the writer conclusively proven that it is neither cardiac nor respiratory failure, but a vaso-motor failure. It has been observed that even after the respiration has ceased the heart has been found yet beating, due in part at least to the dependent position of the heart and its continued blood supply through the coronary vessels. While it is altogether proper to watch the working of the heart during anæsthesia, as the lack of tone about the vessels can be thus readily detected, indicating vaso-motor inhibition, yet the respiratory function should be the one to receive special attention, and so long as respiration is properly performed, the heart, if no organic disease exist, may be left to take care of itself.

Atropine is the most powerful of all the vaso-motor stimulants, and its routine use, unless there be some contraindication, would seem to very effectually guard against disaster.

My remarks have been confined to the physiological action of chloroform, because this drug is in more general use as an anæsthetic and because its action and that of ether are very similar, with the exception that ether is not so depressant to the vital centers, and therefore is safer; yet we should not forget that during deep anæsthesia there is just as great danger of paralysis of vital centers from ether as there is from chloroform.

There are many other important physiological actions of anæsthetics which would receive attention in this paper, and also some notice taken of the physiological action of local anæsthetics, but the time allotted for this is not sufficient.

ADMINISTRATION OF ANESTHETICS IN MEDICINE AND OBSTETRICS.

By H. S. BELT, M. D., South Boston, Va.

I fully realize, and beg you to understand that I am here today, not through choice, nor because I claim any oratorical power nor elocutional gifts, but simply in response to the appointment made by my friends, members of the Executive Committee, who, in their selection, honored me to lead this branch of the subject under discussion at this meeting, which is "The Administration of Anæsthetics in Medicine and Obstetrics."

Had it been left to me, I would have acted very diffrently from the committe. First, I would never have chosen for my subject "The Adminis-

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tration of Anæsthetics in Medicine and Obstretrics" independent of surgery, the main branch of medicine in which anæsthetics have been such a boon to suffering humanity. I really feel that I know less regarding their administration than any other branch of medicine. Secondly, were I going to choose this very uninteresting, but I must add, most important subject, I would have selected some one better posted, and who knows far more of this subject than I, but I have always found that if you have a bad thing you must make the best you can of it; so you must do by me as I will by my subject—that is, make the best of me you can.

I will simply confine myself to my own experience, not going very deeply into the literature on the different anæsthetics, as you can gather any information you may want along this line from the various text-books, which so ably treat this subject.

Anæsthetics are agents which cause a temporary abolition of sensation, whether local or general. General anæsthetics are by far more important, and are usually administered by inhalation, and by their influence upon the nervous system abolish sensation, produce complete muscular relaxation, and finally cause entire suspension of sensation and power of motion, together with loss of consciousness and all manifestations of life, except respiration and circulation.

There are many drugs which, if given in doses large enough to prove fatal, lead to a state of profound unconsciousness and insensibility. We, of this age, however, reckon anæsthetics as only those agents which give rise to anæsthesia regularly and without notable danger. The number of this class, however, has been narrowed down to few, although it was not until the nineteenth century was well advanced that such an agent as a safe and manageable anæsthetic was known. It is no doubt true that our brothers of ancient days made use of some poisonous, narcotic drugs, in exceedingly dangerous doses to mitigate the suffering of patients and lessen the pain of surgical operations to some degree, though they never approached what a modern surgeon, medical man or obstetrician would look upon as satisfactory anæsthesia.

No better did modern scientists succeed until the fourth decade of the present century, within which brief period of time the three great anæsthetics—nitrous-oxide (or laughing gas), sulphuric ether and chloroform—were made known to the world. It is recorded that so long ago as 1799 Sir Humphrey Davy became aware that something more than exhilaration could be produced by the inhalation of nitrous-oxide gas, a degree of insensibility to pain, but he did not carry his investigations far enough to see that laughing gas could be made available as an anæsthetic. That discovery was, however, reserved for Horace Wells, a dentist of Hartford, Conn., who, in 1844, began its use in extracting teeth, and tried to demonstrate its use as a general anæsthetic in an operating theater in Boston. Unfortunately there was some fault in the preparation or administration of his agent, and it dropped into disrepute, whereupon the doctor committed suicide on account of his failure. Some twenty years later, however, it was revived, and from time to time has been used with reasonable satisfaction, mainly by dentists, though of late it has come more into use as a general anæsthetic, being administered in combination with pure oxygen gas. Personally, I have had no experience with it.

"In 1846 another dentist, who afterwards was a physician, William T. G. Morton, of Boston, succeeded in showing in the Massachusetts General Hospital that inhalation of the vapor of sulphuric-ether would produce an entire insensibility to pain."

Opinions are divided as to whom the honor belongs of first having discovered the anæsthetic property of ether, as a number of physicians had experimented with it. It is, however, well established that Dr. Crawford W. Long, of Athens, Ga., used ether as an anæsthetic in surgery as early as 1842, four years prior to Morton's demonstration, though to Morton, I think, was conceded the honor.

Chloroform was discovered independently by Guthrie, of America, and Soubeirain, of France, in 1831. Neither of these gentlemen had any idea of its wonderful therapeutic properties, and it was not until about the year

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1845 or 1847 that it was used in medicine, having been made known to the world chiefly through Dr. (afterwards Sir) James Y. Simpson, of Edinburgh. If I am correctly informed, it was he who first introduced its use in obstetrics, and to his memory should be erected a monument of gold, with a chip of diamond from the hand of every woman in our land. It was at once recognized that chloroform had the advantage of being much more speedy in its action, and more agreeable to the patient; consequently it soon came into common use in Europe to the exclusion of any other anæsthetic. In most parts of the United States the use of ether was continued, and until today in certain localities, especially in the North, ether is used more extensively than chloroform as an anæsthetizing agent.

The question practically has resolved itself into two anæsthetics, ether and chloroform, although a great many surgeons use the combination of alcohol, chloroform and ether, known as the A. C. E. mixture, the exact proportions of which I cannot at present recall, but can be had from any textbook on this subject. At one time I used it extensively as an anæsthetizing agent, but gradually gave up its use for no special reason, except that I liked chloroform alone better, and I think to a great extent the use of the different agents is simply a matter of election. I know a great many surgeons in the same locality who prefer—some ether and some chloroform—both claiming advantages and disadvantages one over the other. I believe, however, judging from what I can best gather, that the general concensus of opinion, combining the North and South, is, that ether is being more extensively used. It is certainly less dangerous in cold climates. My own preference is chloroform, simply because I have become accustomed to using it, and have never had a fatality from it.

Chloroform is a heavy, clear, colorless, diffusive liquid of a characteristic, pleasant, ethereal odor, a burning sweet taste and neutral reaction, commonly obtained by cautiously distilling a mixture of chlorinated lime, alcohol and water, afterwards being carried through a special process of refinement. When administered, it produces quite a different train of symptoms; the patient usually passes through a stage of suffocation, then excitement, followed by deep sleep.

I think the most important thing in connection with its use is the preparation of the patient, and the way in which it is administered. When available a skilled anæsthetist should always administer the anæsthetic, whether for diagnostic purposes, obstetrical cases or surgery. If there is one thing, above all others, that gets on my nerves it is to have to work when you see that your patient is improperly handled in the administration of the anæsthetic. There should be in every locality a man to do nothing else, and who has no interest, other than in the proper administration of the anæsthetic. Such men should be encouraged by receiving more remuneration than the average anæsthetist enjoys. His services very greatly facilitate the speed of the work, which is important, and often means the difference between life and death. If, however, one of this class cannot be had, it is well to remember that chloroform should be given cautiously and slowly, drop by drop, with the patient's lower jaw kept elevated all the while, to prevent the tongue from rolling back in the throat, which cuts off the air and produces the characteristic alarming symptoms so often met with. I always make it a rule to provide myself with an oxygen tank, amyl nitrite and adrenalin chloride in case of accident or danger.

When practicable, I always have my patient given a reasonable cathartic the night preceding the anæsthetic, which is given on an empty stomach, and again, if possible, I always give (unless contraindicated by age, either too old or too young, or some grave form of kidney trouble) one of Abbott's H. M. C. combination tablets hypodermically one and a half hours before the anæsthetic is begun, which tablet contains hyoscine, morphine and cactin. This, I believe, greatly lessens the danger of shock, and takes away to a great extent the fear of the anæsthetic, and for the most part the fear of the operation, if it should be given for this purpose. It also very greatly lessens the nausea usually following the administration of anæsthetics, and requires about one-fourth the amount of chloroform. If you will quietly assure the patient that you will give him only a few drops, and if he cannot take it,

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discontinue its use, and not forget that however skillful you may be, or how accustomed you are to administering anæsthetics, that perhaps this is the first time your subject has ever been anæsthetized for any purpose, and he or she, in all probability, is as uneasy about it as you were the first time you ever administered an anæsthetic, we would have less trouble and less danger in the administration of these agents. Let a patient get partially under the influence of an anæsthetic, approaching the stage of excitement, trying to get up, etc., and hear the anæsthetizer tell someone in the room to hold him, and gentlemen, I tell you the weight of an ordinary man's hand to him feels like a ton is laid on him, and the same way about instruments. A small scalpel to a patient half asleep under chloroform looks like a butcher knife, and nearly scares him to death. This I consider very important, as well as to have the patient kept very quiet while going under the anæsthetic.

The uses of chloroform in medicine are numerous and hard to define, especially to me, as I always look upon it in connection with surgical or obstetrical work, and use it very little in medicine, except in diagnostic work, where I believe it should generally be used, especially in pelvic examinations of young girls, for two obvious reasons. First, it enables you to make a more thorough examination and correct diagnosis; and secondly, saves the girl's feelings of having to undergo a conscious examination at the hands of perhaps a strange physician.

Here I would add that it is important never to administer an anæsthetic to a female unless in the presence of a third party, for reasons which are well known, for some of our friends have recently gotten in trouble along this line.

I also employ it locally in the form of a liniment, and for immediate vesication over small area. Ten or fifteen drops confined under a watch crystal will in a very short time produce intense burning and blistering. Internally I have found but little use for it, other than extreme cases of nephritic or biliary colic, when I have usually found a hypodermic of morphine equally as effectual and more convenient.

I have also employed it internally in combination with croton oil for the removal of tapeworms, but must confess that I do not like it, as there are other agents more effectual and less dangerous. (I will add for the benefit of someone perhaps who does not knod, that powdered kamala given in two dram doses on an empty stomach, repeated in half quantity in two hours, if necessary, will invariably prove effectual in climinating the head of tapeworms). Also in cases of extensive burns, especially in children, the patient should always be thoroughly anæsthetized and cleaned as though for a surgical operation before placing on the antiseptic dressing, which should consist simply of dry sterile gauze, thoroughly soaked after applying with a solution of carbolic acid and glycerine. One dram to six or eight ounces of boiled glycerine, subsequently covered with antiphlogistine to exclude the air. After such dressings, in children, I have known them not to wake until their usual waking hour, when they would then suffer practically no pain. After two or three such dressings at intervals of several days, the patient would be practically well without disfiguration. The dressing must be kept constantly wet with the glycerine mixture to prevent sticking and pus formation.

In obstetrics I rely upon chloroform as my sheet anchor. I have made it an invariable rule for six years to chloroform to a greater or less degree all of my obstetrical cases, and I think I can safely say that they have exceeded upon an average of seventy-five per year, and I have yet the first time to regret its use. Occasionally I hear a doctor say, "I don't use it, and I believe in nature taking its course." I just wish I could sit quietly by and see the nature take its course on the gentleman while he bears the pains of triplets.

During my sixteen years' experience, which covers by actual count a few more than 1,200 obstetrical cases, I have had an opportunity of using it on white and colored, rich and poor, primipara and multipara, on women who have borne one child, twins and triplets, and I believe I have encount-

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ered every known position and complication except one (excluding monstronsities), but have never had any alarming symptoms from its use.

I do not believe the ordinary use of chloroform predisposes to hemorrhage, for the only cases of hemorrhage I have ever seen die were the ones following rapid labors before I reached them without the administration of chloroform. I have been called to many cases, who have been in labor for hours and hours, and who were tossing from side to side, and rolling over the bed like a worm in embers, with rigid os and perineum, practically exhausted, when by the systematic use of chloroform with each pain, and assurance of relief in a short time, these cases would quiet down and bear their pains well; when under its use the parts would soften and labor be terminated in a short time very satisfactorily. In cases of this class, if seen after a few hours suffering without much dilatation, I have found it good practice to give a hypodermic of three-eighths of a grain of morphine combined with 1-150 atropine, which usually stops the pain and gives the patient several hours sleep and rest. The uterine muscular fibers seem to dilate better under its influence, and your patient is stronger upon awakening and in much better condition for the final pains, than had she continued on to the stage of exhaustion.

In all cases of instrumental interference or version or other methods of delivery, I prefer my patient thoroughly relaxed. I think it greatly lessens the danger of laceration, which accident I look upon as a very serious complication in many respects. As to the use of the H. M. C. tablet previously mentioned, I do not approve of it in obstetrics.

Referring again to the uses of chloroform, I have found it indispensable in puerperal eclampsia and strychnine poison.

In convulsions of childhood it is a *"sine qua non."*

What I have said of chloroform is practically true of ether, so far as its anæsthetizing power goes.

Ether is a colorless liquid, gaseous at a temperature of 95 degrees F., rapidly evaporable at all temperatures. It is obtained by the dehydrating action of sulphuric acid on alcohol, its vapor is of high sp. gr., more than two and one-half times as heavy as air, very inflammable, consequently requires very great care in handling with lamps or open fires. It has a strong, disagreeable odor, and hot, burning taste. Its greatest place is as an anæsthetic in surgery and obstetrics.

In medicine I have not employed it very greatly, using it some as a heart stimulant and anti-spasmodic, and in some form of neuroses, having employed it in the form of the compound tincture of ether (Hoffman anodyne) in dram doses.

The administration of ether as a general anæsthetic, I think, from my experience, should be by the open drop method. The old way of smothering a patient to death seems inhuman to me.

What I have said of chloroform, so far as its practical use is concerned, is likewise true of ether. It simply being a matter of choice between the two, each possessing certain advantages over the other.

In cases of chronic nephritic or bronchial trouble, I believe chloroform is the safer of the two, while in cases of heart trouble, such as valvular lesions and atheromitous conditions, I think ether the safer, as it certainly has the advantage over chloroform, according to statistics on sudden deaths, the death rate being several times greater from chloroform than from ether.

When I was in the Presbyterian Eye, Ear and Throat Infirmary in Baltimore, under our lamented friend, Dr. Julian J. Chisholm, he said he had been professor of surgery in University of South Carolina for sixteen years, and professor of the eye, ear and throat in the University of Maryland for a number of years, and had never used an anæsthetic except chloroform, and had never had a fatality, and that patients with no heart trouble took it well, and those with heart trouble took it better.

Now, my fellow-hearers, if there is one of you who has gained a single point from my paper, I am fully repaid for my efforts, although I have presented nothing new, as my subject is by no means a new one.

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ADMINISTRATION OF ANESTHETICS IN SURGERY.

By REID WHITE, M. D., Lexington, Va.

Fully appreciating the proportions of the task which has been assigned me—that of introducing the subject of the "Administration of Anæsthetics in Surgery"—than which there is no subject in the realm of medicine of more vital importance, I feel that I must beg your indulgence in the effort I shall make.

It having been decided that an anæsthetic is necessary for the determination of the nature of or the correction of a trouble in the patient in hand, we are confronted with the question as to which is best—a local or a general anæsthetic.

The subject of local anæsthetics having been assigned to a brother member of the Society, I will at once proceed to the consideration of general anæsthesia as regards its administration in surgery.

The first question confronting us is the *Selection of the Anæsthetist;* and a most important one it is.

This office should be filled by one who has a very wholesome respect for anæsthetics and one who is fearless in the handling of them; one who is experienced (if obtainable), skillful, cautious, always most attentive and watchful. He must be profoundly impressed with the responsibility of his position; that it is on a par with that of the operator. He may, through overcautiousness or timidity, give too little of the anæsthetic agent, producing incomplete narcosis, thereby rendering the work of the operator more difficult or impossible. Or through lack of attention or recklessness the amount may be too great and the tendency to the unfortunate sequels of anæsthesia in this way increased; or, still worse, he has it in his power to kill the patient on the table. The anæsthetist must be quick to detect the signs of danger and prepared to deal with the troubles which occur.

Having secured the services of a competent anæsthetist, we now proceed to the selection of the anæsthetic agent, aided by the judgment of the anæsthetist. Nitrous oxid, ether, chloroform, bromid of ethyl, ethyl chloride, etc., constitute the list of general anæsthetics. Of these we will consider nitrous oxid, ether and chloroform. Trustworthy reports and statistics on the others I have failed to secure, if they exist. I will be glad if in the discussion someone will tell us something of them. The *patient's condition* and the *character of* the *operation* should guide us in making this selection in view of the differences in the action of the various agents. Statistics as to the relative safety of these agents are to a degree misleading. Failure to report immediate fatalities and those resulting from the sequels of anæsthesia (especially the latter) add greatly to the unreliability of these statistics. Ether statistics are much benefited by the latter failure. Such variations may be seen as the following: *Chloroform*—one death in 1,500 anæsthesias to one in 3,200. *Ether*—one death in 2,800 anæsthesias to one in 23,000. *Gas and Ether*—One death in 13,000 anæsthesias. This points to ether as the safer agent—possibly *one* death from ether to *two* from chloroform—with the continuation of gas as introductory to ether narcosis, thereby shortening the time and greatly reducing the amount of ether used. I take it that there will be still greater improvement in the showing of ether. Arranged in order of safety, I should say:

1. Nitrous oxid *first* (being used only for momentary anæsthesia).
2. Ether, preceded by nitrous oxid, *second.*
3. Ether alone, third.
4. Chloroform, fourth.
5. The A. C. E. mixture between ether and chloroform.

Taking into consideration the *patient's condition*, we will first consider the *age.* The *very young* are supposed to take chloroform particularly well.

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The *Lancet* investigation of 406 chloroform deaths showed that 58 of the number were under fifteen years—rather a large number in considering the proportion of operations in those under fifteen years of age to those over fifteen years of age—about 15 per cent. If ether is given to the very young people it must be given greatly diluted with air on account of sensitive respiratory mucous membranes.

Chloroform undoubtedly is the agent for old people on account of their tendency to bronchial troubles and to arterial degenerations. In fleshy subjects chloroform is the safer, owing to tendency in these people to bronchial troubles.

Where good compensation for valvular defects in the *heart* exists there is no choice. In failing compensation with cough, dyspnœa, cyanosis, effusions, etc., chloroform with oxygen, or, probably better still, ether, preceded by gas, as tendency to struggle is reduced to minimum under gas. Use one, and one sometimes wishes he had used the other in these failing compensation cases. The A. C. E. mixture has been suggested as a compromise. This agent might also let us down easy in degenerative changes in the heart muscle. Where *Atheromatous vessels* exist use chloroform—less tendency to cerebral hemorrhage under this agent. Acute and chronic lung inflammations, contraindicate very strongly ether; and so where there is tendency to pulmonary hemorrhage; in acute nephritis always, and generally in in chronic nephritis, avoid ether. *Exhausted* and greatly debilitated patients and anæmics do better under ether. *Chloroform* is the anæsthetic for those subjects suffering from dyspnœa, resulting from pressure (as in abdominal and pleuritic effusions, tumors, etc.).

The character of the operation must have weight. Chloroform must never be given in the sitting posture, as may be thought necessary in nose and throat operations, and sometimes in tooth extractions. In operations upon the *brain* chloroform is best, as it causes less congestion of this organ than ether. Less movement of abdominal muscles, resulting from quieter breathing under *chloroform*, has recommended this agent for abdominal work. The careful, even administration of *ether* overcomes this objection to its use, however. Operations attended with marked shock do better under ether than under chloroform (operations upon intestinal obstruction, kidneys, the optic nerve, etc.).

If you live in the Northern or Western part of the United States use ether. Public sentiment will not tolerate chloroform except in the most carefully selected cases, and then one had better keep quiet about it. In our Southern country chloroform is *the* anæsthetic used. Warm climates are favorable to the administration of chloroform. This cannot apply to this particular part of the South, but it is the explanation given for our better results with chloroform by our Northern brethren. England and the continent of Europe use chloroform; Germany is coming to the use of ether somewhat. This sectional influence should not be allowed to decide this question; but after a most careful investigation of the patient, etc., the question should be decided on scientific grounds. Public sentiment should be disregarded by the profession also. Graduates of the Northern medical schools have a very wholesome respect for chloroform and possibly even a dread of it; and I suspect they see ether handled a bit recklessly in the clinics sometimes; neither drug can be tampered with. One who has never given *chloroform* or seen it given should not rely on his theoretical knowledge of the subject, but should refuse to give the drug until he has seen at least several demonstrations of how it should be done. This also applies to *ether*.

The preparation of the patient calls for a good look into the general condition, with special attention to the condition of the *kidneys*, the *circulatory system* and the *lungs*. This investigation should begin several days before the operation, if possible, and the patient at this time placed on a light, nourishing diet, preferably liquids and semi-solids. For a day preceding anæsthesia non-coagulable liquids should be used (such as *beef tea*, clear soups, etc.). During this period move the bowels with *mild laxatives* and enemas (drastic purgatives depress the patient). Give no food for from

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four to six hours before the operation except in very old and debilitated patients. Here we may give light liquids (no milk) sparingly. If nourishment and alcohol are found necessary within three hours of operation use the rectum for their introduction. Gastric lavage is sometimes advisable in cases of full stomach from any cause where immediate operation is imperative—lessens tendency to aspiration troubles—as in stercoraceous vomiting of intestinal obstruction. Morphia (hypodermically) insures better behavior of nervous, excitable subjects in first stages of anæsthesia; probably increases the nausea following. Constricting bands about waist and neck should be removed, and the investigation of the buccal cavity, disclosing false teeth, chewing-gum, etc., which should be removed, brings us to the actual administration of the anæsthetic agent. And first let us take up the *administration of chloroform*. It is to be hoped that the day is not far distant when a method for the percentage administration of this agent will be perfected, rendering exact our very inexact method of the present time. So far the devices for this purpose have worked wonders in the hands of the inventor and havoc in the hands of others. So we must rely on the time-honored napkin or handkerchief, the Esmarch or Schimmelbusch mask or the Junker inhaler, the latter only valuable in operations about nose and throat, as with its tube attachment the drug may be conducted into the nose or throat without interfering with the operator.

The anæsthetist should have at hand a mask or inhaler, dropping bottle, a mouth gag and tongue forceps (the latter very seldom needed), hypodermic syringe, solutions of strychnine, atropine and brandy, small swabs and holder, oxygen and an electric battery. A nurse, or at least a third party, must be present and an assistant in easy call. The patient, now on the table, should be requested to assume a comfortable position. No pillow, or a very small one, under the head and well under the shoulders, should be allowed. Turn the face to the side. Talk encouragingly to patient and describe sensation of falling and hearing of noises, etc., experienced by patients going under anæsthetic. See that *ordinary quiet* is established in the room, as patients are often greatly alarmed by loud noises in first stages of anæsthesia. Whispering and tipping about the rooms are disturbing also. See to it that the chloroform is fresh and prepared by a trustworthy chemist. Cover patient's face lightly with vaseline; place towels over eyes and mouth to prevent burning by the chloroform. The mask, held several inches from the face, should receive a few drops of the chloroform at short intervals, or the drug may be applied drop by drop. The patient being told to breathe *regularly* and a *little deeper* than usual, the mask may be brought nearer and nearer to the face as the patient becomes accustomed to the odor of the chloroform. Giving the drug gradually insures against violent struggling on the part of the patient. In stage of *excitement* keep up the inhalations, unless breathing becomes labored, when chloroform should be withheld for a moment. *If patient* holds breath do not push chloroform, as presently there will come *one* or a succession of very deep breaths, which may give him an overdose. If vomiting occurs, stop chloroform, turn the face to the side and wait for the restoration of quiet, when inhalations may be begun again. From the start finger must be kept on facial or temporal artery and the eye on the chest, and from time to time on the pupil, watching all the time the color of the face. Continue adding chloroform to the mask until patient loses consciousness and becomes quiet. *Signs of relaxation*, now present, should be slow, regular respiration, contracted pupil, loss of conjunctival reflex, loss of resistance, and reflexes. *Patient now* ready for operator to begin work. *Chloroform* must now be reduced to the minimum amount necessary to maintain relaxation and insensibility. If stertorous breathing begins reduce or stop chloroform for a moment. If breathing becomes noisy and obstructed see if tongue has fallen back. If so pull jaw forward or resort to the use of tongue forceps. If sudden pallor develops, breathing becomes shallower or stops suddenly, or pulse becomes disturbed or stops, or pupil becomes dilated and fixed, *discontinue* chloroform and proceed to institute means for resuscitation.

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The operator suspends work and protects the wound. An assistant gets on the table, and, grasping the patient under the knees, elevates the body to an agle of 45 degrees.

Artificial respiration by the Sylvester method is established. Stimulants used hypodermically by the anæsthetist; ether poured from considerable height on epigastrium, sometimes excites respiratory effort.

Upon return of color, pulse and regular breathing patient may be lowered to the table and operation resumed, after patient has been brought cautiously under the anæsthetic influence again.

In cases showing gradual weakening of pulse, ether as a substitute for chloroform sometimes proves beneficial. In cases of shock and profuse hemorrhage, very little chloroform should be given. In forgetful breathers, stop chloroform and make traction on the tongue. Patient should be watched closely until entirely from under the influence of the drug.

ETHER—In a general way the administration of ether is the same as that of chloroform, as far as the "open method" of administration is concerned. The "close method," calling, as it does, for a complicated equipment which requires for its manipulation unusual skill, such as is possessed only by the inventors of the outfits, we will not consider.

In the "open method" we may use either the cone made of cardboard and covered with a towel or the Allis inhaler. The latter is convenient and entirely satisfactory. Preparation of patient for ether practically same as for chloroform. The Allis inhaler is placed over the face dry, and patient is told to take two or three breaths through it, and to breathe regularly and naturally. A few drops of ether poured into the inhaler; add small quantity at short intervals, encouraging patient to breathe regularly and not too deeply. If strangling and coughing occur, remove inhaler and allow two or three breaths of air. Begin inhalations again cautiously. Increase the quantity carefully as the patient becomes accustomed to the fumes, which are very irritating. As consciousness is lost there is frequently a tendency to vomit, which tendency is as a rule readily overcome by "pushing the anæsthetic." In this point ether differs from chloroform. There is a short period of unconsciousness and insensibility from ether lasting from one to two minutes, which is known as the period of "primary anæsthesia." During this stage operations of short duration, such as opening an abscess or dilating the sphincter may be accomplished. Here we find another difference from chloroform. Never operate under chloroform unless the patient is completely under the influence of the drug. Following this stage of primary anæsthesia there comes the stage of excitement which lasts some five to ten minutes. During this stage the anæsthetic should be given regularly as before.

Keep the eye and ear on the respiration in giving ether. Now we pass on into the stage of complete anæsthesia, and the amount of the anæsthetic should be cut down to the minimum—this is particularly important in giving ether, as it does great harm as an irritant to the respiratory outfit and the kidneys—the more of it inhaled the more damage done.

We look for cyanosis with great dread in giving chloroform; not so in ether. The period of unconsciousness following ether narcosis varies from half an hour to several hours, during which time the patient should be watched closely. The attendant turns patient on side, or at least the head to the side, if vomiting comes on, in order that the vomited matter may pass readily from the mouth—thus reducing danger of inspiration trouble.

Guard patient against exposure. In applying heat remember that in this condition of benumbed sensibility the surface may be badly burned. Liquids may be allowed in a few hours after ether, being guided by the desires of the patient. Hot water per rectum satisfies the thirst very greatly.

NITROUS OXID has been used for years as an anæsthetic—it being supposed that its action as an anæsthetic was dependent on its producing asphyxiation. It is now used for prolonged anæsthesia when combined with oxygen, and in this combination it produces anæsthesia without cyanosis, which places it in the class of true anæsthetics. It is advised in this form as the anæsthetic for nephritis subjects.

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The principal use in surgery of this agent is that of introductory anæsthetic to ether. The gas is stored in steel tubes, in which it is liquefied. From this tube it passes to a rubber bag, where it vaporizes, and is given to the patient.

In administering gas, place a piece of wood or cork between teeth (safety string attached). Insert the mouthpiece. Close the nostrils with thumb and fingers. Cyanosis shows itself when the lungs become filled with gas. Unconsciousness begins to show itself in a few seconds.

Signs of asphyxia will soon become evident—rapid pulse, stertorous breathing, dilatation of pupils and cyanosis. This condition may be looked for within a minute.

In giving gas, watch the pulse carefully and any sign of failure there should be taken as a danger signal and the gas withdrawn.

In using gas and ether, the gas is given in small quantities and the ether gradually added. Complete anæsthesia is very quickly and very pleasantly accomplished in this way. When once under the influence, anæsthesia is continued with ether.

With our present light on the subject, it seems to me that this latter combination is the ideal anæsthetic in cases not showing any especial contraindication to ether.

INDICATIONS FOR AND SELECTION OF LOCAL ANÆSTHETICS.

By LOMAX GWATHMEY, M. D., Norfolk, Va.

Ex-President, and Honorary Member of Medical Society of Virginia.

On looking over the voluminous literature on the subject of local anæsthesia one is impressed with the remarkable disparity in the number of patients operated on in foreign clinics and in the United States by this method. There seems a constantly increasing number in this country, but the growth is scarcely perceptible compared with the rapid increase abroad, where in some clinics local and spinal analgesia have almost supplanted the general methods of chloroform and ether. Torrance quotes Penkert as stating that in Professor Kroenig's clinic in Freiburg they have given a general anæsthetic thirty-five times in a series of four hundred major gynecological and abdominal operations, and that these were given either at the request of the patient, the family or the doctor sending in the patient. They use stovaine spinal anæsthesia.

I cannot but feel that the reasons for this disparity are to be found in our national characteristics. We seek perfection, but by rapid strides. Chloroform and ether, in our hands, have proved very satisfactory up to a certain point, but that there yet remains much mental reservation in regard to their use is evidenced by the development of professional anæsthetists, who are safer and more adept in their handling of the subject. Under local anæsthesia we must expend more time in operating and more care and delicacy in our handling of tissues.

In large clinics this is the chief bar to their use. The same objection does not hold good in the matter of spinal analgesia, and I think with more thorough understanding this method will be much further employed in this country.

There are, in many instances, very decided drawbacks to the use of ether and chloroform; and in visiting many clinics and in my own work in the general hospitals I am constantly impressed with the crudeness and danger of the anæsthetization; subjected to the tender mercies of untrained,

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short-termed internes; patients' lives and comfort are jeopardized in a heedless and barbarous fashion that calls for protest from all conscientious men. See the cases of temporary and prolonged nausea, conjunctivitis, of bronchitis and aspiration pneumonia, of blocked kidneys and nephritis and the commonly unrecognized heart strain from overloaded right heart in cyanotic patients who are allowed to strain against half-occluded air passages while the anæsthetist diverts himself with the operative procedure or other objects of interest! The mortality rate from anæsthetics is notoriously incorrect, is much larger than the tables given, and is misleading. When we consider the delayed convalescence from disturbed digestion, the many inconveniences of the sequence of chloroform and ether, the pain of the shock of vomiting or coughing, it would seem we are falling short of our duty when we fail to provide a professionally trained anæsthetist or seek some other method under which to operate.

It is for the consideration of this latter subject that I am here. In the whole domain of surgery there are practically no operations which cannot be done under local and spinal analgesia, many which are better done, and others yet wherein a general anæsthetic is positively contraindicated.

In using local anæsthesia it is essential in the initial stages of the procedure to go slowly and avoid the pain which can be caused by the instillation of the agent, to await the development of complete analgesia and to avoid rough handling of tissues, blunt dissections or undue tractions on sensitive parts. A thorough study of the nerves, sensitizing the operative field and a knowledge of those tissues which are highly sensitive and those which are but slightly so, is of vital importance. Of the many agents which have been and are being used our selection of one can be well guided by the rules laid down by Braun.

1. Toxicity.—The poisonous dose must be known and not approached or exceeded. There are few of the known agents relatively less toxic than cocaine because of their less relative analgesic power. This does not hold in spinal analgesia.

2. Irritating Qualities.—Must not impair healing; be neither acid nor alkaline.

3. Sterility, Solubility and Durability.—Cocaine has heretofore been objectionable because of its difficult sterilization.

4. Must permit of combination with adrenalin.

Starting with these qualities, we must next procure an isotonic solution, which, when injected warm, will cause neither shrinking nor swelling of cells and little or no pain or irritation.

Strong solutions are only permissible as topical applications, and then should be guarded by adrenalin; hypodermically, they are strongly contraindicated for the double reason of local irritation and toxic effect, it being demonstrated that a given amount of cocaine in 5% solution is five times as toxic as the same amount in a 1.5% solution (Reclus).

The indications for local and spinal analgesia can be discussed at great length; broadly speaking, they are indicated where a general anæsthetic is contraindicated, and where an operation can be as well done with a local anæsthetic, the patient not objecting. Local anæsthetics have been largely relegated to minor surgery in this country and find frequently an inappropriate and absurd use in inflamed tissues, which are only properly handled under general anæsthesia; whereas, for example, a crushing injury of the lower extremities with great shock, in which the nerves should be blocked a general anæsthetic is commonly used (increasing, not decreasing the shock), simply because it is a major operation.

The more specific indications are those cases of general diseases, such as profound anæmia, where the hæmolytic action of chloroform and ether is well known; in diabetes, which is commonly accentuated by general anæsthesia and even precipitated into dangerous coma; hyper-thyroidism, uncontrolled by the usual methods sufficient to warrant the use of general anæsthesia, where perhaps only a little attempt at control, such as the ligature of one thyroid artery at a time. Kocher is the great advocate of local agents in thyroid cases, and his statistics bear out his statements.

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In cases of poor resistance, where the organism is staggering under the onslaught of an overpowering invasion of toxins and has developed just sufficient resistance to be wavering in the balance, the added depression of a general anæsthetic often turns the tide, and the patient is overwhelmed. Such cases are exemplified by emphysema, stercoraceous vomiting, diffuse peritonitis and strangulated hernia of forty-eight hours' duration or more.

In laryngeal obstruction, where the paralysis of the auxilliary muscles of respiration under general anæsthesia would be sufficient to cause asphyxiation.

In profound shock, where the nerves can be easily approached and blocked by peri and interneural injection, even in anæsthesia of a general nature, where traction on or irritation of nerves produces great shock, it has been pointed out by Crile that cocainization will relieve this as in the dangerous superior laryngeals, in laryngectomy, etc. This nerve-blocking action is of inestimable value, and in it local anæsthesia finds one of its most indispensable and valuable uses.

In diseases of the lungs, such as tuberculosis, pleurisy, pyo- and pneumothorax, asthma, embolic, broncho- and lobar-pneumonia, etc.; of the heart, as myocarditis and pericarditis and effusion; of the kidneys, as acute parenchymatous nephritis; of the liver, as large abscesses on the verge of interpleural or interbronchial rupture; in the cirrhosis of drunkards who have wet brains; of the intestines, as obstructions of long standing with fecal vomit, where simple enterostomy or colostomy is indicated, and in strangulated hernia of long duration; of the central nervous system, where irritation or inflammation exists, as in meningitis of all types.

The contraindications are: In inflamed tissues directly; in children too young to understand the circumstances; in neurotic and hysterical subjects incapable of self-control and prone to exaggerate the simplest actions; in very fat subjects for local infiltration though not for spinal anæsthesia.

As elective fields for local infiltration: The eye, nose, pharynx and larynx, but not the ear or mastoid, which are better left to gas and ether, respectively. All comparatively superficial fields, where the supplying nerves are easily reached, particularly the genito urinary region, as circumcision, hydrocele, varicocele, hernia, etc. The digital extremeties, whose four supplying nerves can be easily blocked at the base of the part. The scalp lends itself especially happily to this method, for any area can be easily rendered analgesic from the periphery, and wounds can be properly cleaned up and explored and sebaceous and other tumors removed.

DRUGS, PREPARATION AND STRENGTH.

Of the many drugs prepared we will consider those for topical application: Cocaine, alypine, tropacocaine; for infiltration, cocaine, beta eucaine; for spinal analgesia, cocaine, stovain, novocain.

Of these cocaine and tropacocaine are alkaloids from different varieties of the coca plant, and are used in the salt, hydrochloride. The others are synthetic productions, and can be boiled; they are less toxic, less active, and combine partly with adrenalin.

Cocain, used as the soluble hydrochloride first obtained in 1860, and used as a local anæsthetic since 1884, when it was introduced by Koller, of Vienna, is the best topical and infiltration analgesic when properly used. It can be sterilized by fractional dry heat. (1) at 80 C., one hour for three days; (2) 20 minutes in autoclave at 115-120 C.; (3) boiled once slightly (Riley).

Dry heat 230 F. for ten minutes, amounts weighed, put in tubes and again sterilized (dry), 290-302 F. ten to 20 minutes (Kocher), boil and use warm. Tablets and preparations of the pharmacists, with adrenalin and sodium chloride. The toxic dose in strong solutions and weak subjects is one-fourth gr. In weak solutions, guarded by adrenalin, and in strong subjects up to one gr. The toxic symptoms are weakness and tremor, headache, vertigo, pallor, moist skin, feeble, rapid pulse, slow, shallow respiration, nausea, vomiting and unconsciousness. The treatment is to lower the head

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and use ammonia, whiskey or brandy by mouth and camphorated oil or ether with cardiac stimulants by hypodermic.

Topically, guarded by adrenalin, the crystals may be used on small areas or as strong as a 10% solution. In the urethra a 1% solution is sufficiently strong if given the proper time. In infiltration never beyond a 1% need be used and preferably .2%, or (1-500) for skin and peri or interneural injections and .1% (1-1000) for subcutaneous tissues, muscles, etc.

The osmotic tension is of great importance. An isotonic solution should be about .9 sodium chloride; below .55 or over 2.5 causes pain and lowers the vitality. The solutions are best used warm. Braun's solutions are here given as very useful:

(a) Cocaine hyd. .1 gm. (gr. 1.5) physiological salt 9-10, 100 c. c. Solution adrenalin 1-1000 5 gtts.=cocaine Sol., 1-11000.

(b) Cocaine hyd. .05 gm. (gr. 0,75). 1-100 physiological salt 5 c. c. solution; adrenalin 10 gtts.=cocaine Sol., 1-100.

Alypine is neutral in reaction and does not cause ischæmia, but a slight hyperemia, and is not irritating. It is but faintly toxic and has a rapid and excellent anæsthetic power, said to be nearly equal to that of cocaine. It is a most excellent drug for topical application in eye, nose and throat work.

Tropococaine possesses no advantages over cocaine, except that it can be boiled. It is less active and less toxic, but will not combine with adrenalin (?).

Eucaine, a synthetic product, soluble to 4%, but easily decomposed by alkali in even minute amounts. Has the same freezing point as blood 0.56 and same osmotic tension. Markedly hæmolytic, and may irritate or cause necrosis in strong solution without salt. Less toxic and much slower in action than cocaine and can be boiled. Barker has used as much as 200 c. c. of a 1-500 solution. As much as 6 grs. has been given. Barker's formula is:

Eucaine 0.2 gm.....gr. 3.
Na. Cl., 0.8 gm.....gr. 12.
Aq. Dist. 100 c. c.....℥ 3½.
Sol. adrenalin 1-1000, 10 gtts.=0.5cc.
(Adrenalin, 1-200,000)=Eucain Sol., 1-500.

Stovain and novocain, synthetic products, are best for spinal analgesia. They can be boiled, and combine fairly well with adrenalin. They are but faintly toxic.

Eucaine, nirvanin, orthoform, aneson, akoin, holocain, magnesium sulphate, etc., have all been mentioned and advocated, but the above drugs seem about the best in their different places.

Morphia, gr. ⅛ to ¼, with or without hyoscin, gr. 1-100, or scopolamin, gr. 1-100, should precede operation by one-half to an hour. The patient should not be fasting, but have taken a raw egg and cup of black coffee or a glass of wine or milk.

Technique.—Topically in inflamed areas; blocked beyond inflammation in the course of nerves by hypodermic injection and ligature, Luke recommends this formula:

Sol. Ac. Carbol, 10%, ½ ℥.
Sol. Coc. Hyd., 10%, ½ o℥.
Glycerine, 2 drs.
Dist. Water, ad. 2 o℥.

Immersion in the solution for ten or fifteen minutes, with the addition of carbolic crystals to carbuncle openings, etc., will do much to allay pain. We prefer peripheral blocking where practical, or, better, the administration of nitrous oxide gas. On mucous membranes, such as the nose and pharynx (exception is noted in the care of the larynx), where absorption is rapid, cocaine in strong solution should be applied only with adrenalin.

For infiltration of the skin all hypodermics should be of glass and be boiled, the solution freshly prepared and warm. The initial skin infiltration is begun with care, and as each wheal is formed in the deep layer of the skin the needle should only progress after an area is analgesic. In this

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way only the initial prick is felt. The solution is now changed from 1-500 to 1-1000 if the area is extensive, and the subcutaneous tissue, fascia, muscles and peritoneum or periosteum successively infiltrated, a long needle being used for the deep tissues. The known nerve courses should be blocked by pushing the needle in their direction beyond the immediate field of operation. The sensitive tissues must be borne in mind, as skin sheaths and connective tissue bundles, synovial sacs, periosteum and peritoneum, the blood vessels and the usual structures along which nerves run. The insensitive ones are such as subcutaneous tissue, muscle, bone and cartilage.

Structures with spinal nerve supply are mostly sensitive, and those with sympathetic but faintly so. A sufficient time should now elapse without disturbing the tissues for the full analgesic effect of the agent. This is from five to fifteen minutes with cocaine and from fifteen to thirty with B. Eucaine. The edema likewise subsides. The adrenalin prolongs the anæsthetic period to from one to three hours, and the tissues liberate the agent so slowly that it is destroyed without toxic effect.

The healing after local analgesia has seemed to be rather better, if anything, than under other methods; the necessarily gentle handling of structures and the clean, sharp dissections may account for this, however. The danger of secondary hemorrhage from the minute quantity of adrenalin is too remote to be seriously considered. Where much infiltration has been done it is wise to insert a few strands of silkworm gut through the skin for serum drainage.

Spinal analgesia in its later development seems remarkably safe and efficient, and the study of the evil effects diminishes when we consider the number of operations and the variety of drugs used. In a tabulation of 5,532 cases of stovain analgesia by Torrance, of Birmingham, the fatalities are less than would have occurred in the same class of cases under other methods.

Küster states that there have been no cord degenerations after eight years of use of all kinds of drugs in many lands.

The immediate evil effects are headache, vomiting, weakness and anorexia lasting for days. Occasionally there are chills and rise of temperature, occasioned doubtless by mild meningitis. Küster states that with improved technique his last three hundred cases have been without any unpleasant symptoms; he uses novocain. In the first two hundred 14% had headache, which was relieved by withdrawing 10 c. c. of spinal fluid or a dose of pyramidon. His present technique withdraws 15 c. c. initially, and only introduces 2-3 c. c. of novocain solution. This has obviated headaches. His formula is:

Novocain, 0.15 gm.
Suprarenalin Borici, 11000, 5 gtt.=000325.
Aquæ, ad. 3 c. c.

He uses 2 c. c. for low and 3 c. c. for high operations, elevating the hips as needed.

Mitchell, in Bryant's and Buck's Surgery, gives the doses of cocaine:

(1) Lower extremities, 15 mgm.
(2) To sternum, 20 mgm.
(3) Upper extremities, 50 mgm.

Braun's tablets.

Cocaine, 10 mgm.
Suprarenalin, 1-10 mgm.
Salt, 90 mgm.
Beta Eucaine, 15-35 mgm.
Tropococaine, 30-40 mgm.
Stovain, 40-70 mgm.

The technique is simple. The patient is prepared, as usual, but not fasting, a glass of milk, wine or cup of coffee being taken, and a hypodermic of morphia, gr. ⅛ to ¼, given one-half hour preceding. The best position, patient sitting with shoulders bent forward; if unable to sit, the lateral bent position can be used, but must be changed to get uniform analgesia.

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After scrubbing and making sterile, a small nick in the skin will enable the needle to enter with less pressure. A point one-half inch to one side of center and just above line between iliac crests is selected. After the needle is introduced from one to 3 inches, depending on the subject, the wire in the needle should be withdrawn just before the dura is reached, and the flow of spinal fluid marks the termination of the puncture. After the withdrawal of the amount of fluid decided on it can be used as a diluent of the agent if desired, though there seems but little to be gained if we are using an isotonic solution. The syringe is attached and the agent introduced. The patient should continue sitting a minute or two and should then lie down. Should high anæsthesia be desired the hips are elevated. The operative field is now prepared, and with this completed the analgesia is usually complete. All forms of operations are done with this method from breast amputation, all through the abdomen and to the lower extremities. Ryall prefers the method in prostatectomy of old men, and all claim much less shock by the nerve-blocking in all types of operations.

DISCUSSION.

DR. VIRGINIUS HARRISON, *Richmond, Va.:* If I had time I would discuss this subject under four heads—first, the medico-legal; second, indications and contraindications for the use of anæsthetics in obstetrics; third, the scopolamine, or hyoscine-morphine anæsthesia; and fourth, a plea for the professional anæsthetist, who should be well paid and knows his business. I will take up the medico-legal aspect.

When administering chloroform or ether to a female patient there are certain psychical conditions produced which the patient converts in imagination to the sexual act. Therefore, it is important that no doctor should administer an anæsthetic to a female when alone with the patient. The genital sensation is about the last to be lost; the mind cannot control itself, and converts the effect of the anæsthetic into the physical act. You cannot disabuse the mind of the patients that some liberty has been taken with them. Ninety per cent. of these cases occur in the dentists's chair. There is a case on record when the mother, father, brother and family physician of a young lady were present when chloroform was administered for the extraction of a tooth. She insisted that some liberty had been taken, in spite of the testimony of all those present to the contrary. Even though disproved, the charge will always be remembered against you, and you will be looked upon by some people as probably guilty.

We often see in the newspapers that chloroform was used for robbery. In one case it was reported that it was squirted through the keyhole, and the occupant of the room anæsthetized. That is, of course, out of the question. Where one person is in bed asleep it is possible to administer chloroform effectively without arousing the sleeper, but it requires an expert to do it, and burglars are rarely experts. So, generally, those reports can be put down as not being probable. The same thing holds in regard to rape.

In regard to obstetrics, when Simpson, in 1847, first gave chloroform in surgery, and soon afterwards in labor, in Scotland, there was great opposition to giving it in labor. That went on until 1857, when Queen Victoria took it at the birth of Prince Leopold, and then public opposition ceased. So to Queen Victoria is due the present use of anæsthetics in labor, and every woman owes her a debt of gratitude.

The indications in obstetrics: When in the first stage we have an easily dilatable os it is necessary, as a rule, to give chloroform until the second stage comes on and the head pushes down against the perineum. Then the indication is for chloroform to relax the perineum, relieve the suffering and perhaps prevent laceration. Often the cause of laceration is precipitate delivery, the head pushing down on the perineum. Under the influence of chloroform you can hold the head back, then let it come forward a certain distance, dilating the perineum, and in that way prevent the laceration.

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DR. CHARLES S. WEBB, *Bowling Green:* Not long ago I had occasion to write a paper on the use of anæsthetics in obstetrics. I read everything I could find on the subject in the New York libraries. I then sent a personal letter to the professors of obstetrics in many of the principal colleges in the United States with certain questions, one of which was this: What effect has chloroform on the progress of the labor? In every case the reply was: It will almost surely lessen the force of the uterine contractions, and in very many cases will stop the labor altogether. That has been my experience.

There are two kinds, or, if I may so speak, two qualities of labor pains. In one case you have all pain and no push. The woman suffers intensely, but there is absolutely no, or very little, uterine contraction. In the other case there is very little pain, but the most powerful contraction. You cannot administer chloroform in anæsthetics indiscriminately and at haphazard. You have to know your ground. If the pains are coupled with powerful contractions you can give it to complete anæsthesia. But if you give it at random you will often stop the labor or you will so cripple and cramp it that the child will be born dead. You will make it slow, and have to wait and let the woman start again; and what have you gained? If you will tell the woman that the life of the child is at stake she will brace up and bear it nobly. We cannot give the anæsthetic at random, but must know what we are about, and take the case for what it is worth.

DR. H. D. HOWE, *Hampton, Va.:* Dr. Gwathmey made no mention of the use of chloride of ethyl. Personally, I believe that, except for its very excellent mental effect, cold used locally is practically useless. In fact, the ensuing pain which comes with the return of the part to its normal state is very much greater, in my experience, than that from opening an abscess or some other minor work. For the infiltration method of local anæsthesia cocaine in one of its various dilutions, I believe, is the very best agent that can be used. Probably the best is 1-10% in combination with normal salt solution and a small amount of adrenalin. The method of administration is important. We so frequently give this substance cutaneously instead of intracutaneously. If it is given into the skin so that each successive prick of the needle raises the characteristic wheal the patient will certainly be relieved. In deeper parts the best method is that described by Cushing of nerve-blocking. I believe that in the vast majority of hernias in which one will take the time the operation can be done under local anæsthesia without pain to the patient. In fact, practically any operation near the surface can be performed under local anæsthesia.

I want to express my feeling, however, of the too sanguine note of those who are carried away with local anæsthesia. I do not believe in selecting this form over general anæsthesia in all cases in order to avoid shock. I have seen goitre operations in which the operator said there was no pain, but the patient was writhing. I believe the shock in that operation was very much more than it would have been in the same operation performed under a general anæsthetic properly administered. In the operation referred to I think they were a little too saving with the anæsthetic. The use of a local anæsthetic in an inflamed area, unless that area can be thoroughly controlled by blocking the nerves at a distance from it, renders the anæsthetic practically useless, and the pain of the recovery from the anæsthetic is very much intensified.

The pain can be abated to a decided extent in any local anæsthesia by giving a preliminary dose of morphine combined with scopolamine or hyoscine, and that probably would be all that is necessary in small operations. But in a large operation, upon reaching a sensitive area, a few whiffs of chloroform or ether should be added to it.

DR. STEPHEN A. HARNESBERGER, *Catlett:* I am an advocate of chloroform. I do not know anything about ether. I do not know anything about local anæsthetics. I have always used chloroform in all cases where I needed an anæsthetic. It has always been understood that the action of chloroform is uncertain. I have had many years' experience with it, and have found that

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its action is not uncertain if properly used. The lethal and less destructive action of chloroform is a contingent action, and this contingent action is dependent upon, for the most part, first, the method of the anæsthetist; second, the complexity of the physiology or pathology of the patient; and third, the lack of oxygen in the atmospheric air of the operating room. The method of the anæsthetist determines in great measure the success of the operator. If this is not true, it is true that it determines the safety of the patient. Haste and economy should not be considered. The anæsthetist who cannot take time and wastes chloroform had better call in a substitute.

The drop-by-drop method, the dropper held high above the inhaler in order better to vaporize the chloroform is, in my experience, the safest way to give it. A sudden dash of water in the face shocks the whole nervous and circulatory systems. The sudden application of a strong amount of chloroform will do the same thing. The nervous system should be quieted and the circulatory system should be strengthened, and we can do both with chloroform if we use judgment and care. The huntsman goes out to hunt. He understands the action and uses of powder, but the gun explodes. Certainly we cannot say it was on account of the uncertain action of powder. The huntsman omitted one important thing—he failed to examine the gun for mechanical defects. And the anæsthetist will bring disaster who fails to examine the patient for physiological defects. The anæsthetist should not only understand the physiological action of chloroform, but he should understand its clinical action. He should not only know the personal history of his patient, but his family history; he should not only know the physiology of his patient, but the pathology. I think it is a mistake to call an undergraduate or even a mere graduate in to give chloroform. The anæsthetist should have three, five or ten years' experience in general practice before he can be considered safe in the use of anæsthetics.

On motion, Dr. William Gwathmey, of New York, a professional anæsthetist in that city, was invited to participate in this discussion.

DR. WILLIAM GWATHMEY, *New York, N. Y.:* If there is any one thing in medicine or surgery about which we all know something it is anæsthetics. We all feel competent to give it; we are all willing to have our friends give it to our patients except when it comes to ourselves.

First, in regard to local anæsthesia. My brother (Dr. Lomax Gwathmey) mentioned the subject of chloroform as not being very suitable for that anæsthetic. I have seen about 50 cases of spinal anæsthesia. Of these 35 cases were children under fifteen years of age. The method of preparation of the cocaine for spinal analgesia he did not touch upon. I have seen one or two cases of failure of spinal analgesia under cocaine by some of the best surgeons in the country, due to faulty preparation of the cocaine. But following the method of Dr. Brodiner (?), I have never seen one. Five grains of cocaine crystals are placed in a sterilized glass receptacle. Thirty minims of strong ether from a freshly-opened can is poured over it and gently stirred with a glass rod until the crystals are thoroughly dissolved. The ether is then removed by evaporation. First, a gelatinous paste is formed, and then the cocaine is dried and powdered on a glass. Half an ounce of cold sterilized water is added, making practically a 2% solution. Dr. Brodiner (?) has had 500 cases and no fatalities by this method. Of the 50 cases I have seen only one was followed by nausea and vomiting to any alarming extent.

No one is justified in giving a pulmonary anæsthetic if a local analgesic will answer the purpose.

We are especially interested in New York in rectal anæsthesia. We use it there when a pulmonary anæsthetic is contraindicated or when the anæsthetist would be in the way of the operator. We start with gas, then switch to ether, and when the patient is on the table the tube is placed in the rectum. There are two points in rectal anæsthesia which they did not have in the years past, which do away with the element of fatality, namely, pressure and temperature. The temperature is gauged, and we are also careful as to the amount of pressure, over-pressure never being exerted.

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In regard to the temperature in chloroform anæsthesia, it seems to me I settled that question in 1904. I killed hundreds of animals in the laboratory, using all the different anæsthetics, first heating them to the temperature of the blood, and then to room temperature. I found that it took twice as long to kill an animal with warm chloroform or other anæsthetic, using the same technique and amount. It applied more especially to chloroform. Away back in the time of Clover it was known that the heating of ether was of value in doing away with the nausea and vomiting following anæsthesia, but until my own experiments it was not known why it was safer in the South than in the North and safer in summer than in winter. Then, again, we know that in tropical countries it is almost impossible to get a patient under anæsthesia with ether, and we have to use chloroform by a more or less closed method.

There are so many anæsthetics and so many sequences that we are not justified in recommending one to the exclusion of all others. Hewitt, in London, has this as his usual procedure: Starting with gas, he then switches to ether, and after the patient has gotten the stimulating effect of the gas and ether upon the heart and respiration, he switches to chloroform. I use one four-gallon bag of gas, and then switch to ether. If it is an abdominal case, I continue the closed method until the stitches are about to be applied, and then switch to chloroform. In that way there is less nausea and vomiting than in giving gas and oxygen. Hewitt states that the greatest progress that has been made lately is the interruption of gas and oxygen with nitrous oxide. The anæsthetic as we give it to-day is hard to rely upon. I have given numbers of anæsthetics with it, but always feel backward in giving it. I have given it as long as two hours continuously without the aid of ether or chloroform, and it acted beautifully.

We must consider the modifications. It makes no difference whether it is local anæsthesia, spinal analgesia or pulmonary anæsthesia, the patient, unless there is some contraindication, should have a preliminary dose of morphine, graduated according to size, age and condition of the patient. I have done more work with Dr. Bodiner than any other man in New York City. He invariably gives an eighth to a quarter grain of morphine before he does any local work. The same should apply to spinal analgesia and pulmonary anæsthesia. If there is a contraindication to the use of morphine, give an enema of normal saline in 7 to 10 oz. of whiskey. It blocks the nerves, prevents shock, quiets the patient, and brings him to the table in normal condition. If you had examined the hearts of patients day after day and given anæsthetics, and noticed the difference in the heart with the preliminary medication and without it, you would never omit it unless there was some very strong contraindication. When switching from gas to ether or from ether to chloroform the vomiting center is put in abeyance as well as other nervous centers; and where we are maintaining a degree of anæsthesia just below the second stage, where we do not wish to soak the patient, where we do not wish to give a drop more than is necessary, we can maintain that stage better with this preliminary medication than in any other way.

DR. LOMAX GWATHMEY, *Norfolk* (concluding the discussion): I do not think we fulfill our function in doing an operation and calling it analgesia unless the patient says it is analgesia. I also have seen goitre operations where the patients were in pain. But unless you can do the operation in which the patient says he has no pain, I do not think we have done our duty by them. We can in the vast majority of cases, but unless we work sufficiently slow to enable us to do it we do not do the proper operation under local analgesia.

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INTERSTITIAL KERATITIS DUE TO ACQUIRED SYPHILIS.

By J. HERBERT CLAIBORNE, M. D., New York, N. Y.,

Instructor in Ophthalmology, Cornell University Medical School; Surgeon New Amsterdam Eye and Ear Hospital, etc.

It is well known that interstitial keratitis has been considered a pathognomonic symptom of congenital syphilis, but it is not until recently that interstitial keratitis has been known to follow acquired syphilis. Mr. Hutchinson, in his classical memoir (Ophthalmic Hospital reports, 1858), said: "Although I will not make so sweeping an assertion that interstitial keratitis never occurs except in a subject of inherited taint, yet I cannot conceal from myself, and have no wish to do so from the reader, that such is my present belief." In 1874 Mr. Morton, of Moorefield's Hospital, published a case of interstitial keratitis in acquired syphilis, and Mr. Hutchinson changed his mind in the following manner: Referring to Mr. Morton's case, he said: "So far as I know, Mr. Morton's case remains practically unique. I have seen a few doubtful and ill-marked parallels, but never one that could be properly placed by its side. Why keratitis should be so common in inherited syphilis and so rare in the acquired disease, is one of the pathological enigmas for which we have as yet no answer."

Dr. A. E. Davis, of New York, in a paper read before the Section in Ophthalmology of the American Medical Association, Chicago, June 25, 1908, collated references to almost all the cases which have been reported of this rare affection. He pointed out that in the Journal of the Association no case had been published since its establishment in 1883. He also stated that no case has been reported in the Transactions of the American Ophthalmological Society since its first publication in 1864. This is true also of Knapp's Archives of Ophthalmology and a number of other well-recognized ophthalmological journals. Only a little over 100 cases have been reported up to date, in all the literature of the world, and in American Literature about a dozen.

For my own part, I am free to say that not until within the last six months have I seen a case of interstitial keratitis which I could reasonably say was due to acquired syphilis. On making inquiry of a number of my colleagues, I have received the answer that they have seen a number of them in their lives, but have never published them. Several observers have reported cases verbally in societies, but have not published them. Most of the text-books of today make slight reference to the affection, without giving any particulars of it.

The three cases which I shall now report were without doubt due to acquired syphilis.

Case I.—A woman of thirty-three had acquired syphilis eight years before, and within the last six months I saw her for the first time. The right eye was the first affected, and on examining her I discovered that she had marked interstitial keratitis. The points of infiltration were clearly beneath the epithelium of the cornea in the substantia propria. There were a number of them about the size of the head of a pin, and another patch of a diffuse character. There was mild iritis, and the disagreeable symptoms which go along with that element of the trouble. The woman was a strong, stout individual, of apparently great vigor and vitality, with a beautiful complexion, and no mark whatever in teeth or the corners of her mouth, of inherited syphilitic infection. After I had treated her for a month, the other eye became sore and a picture of interstitial keratitis still more classical developed in that eye. This infiltration was almost altogether diffuse, and at one particular part of the cornea—namely, downward and outward—it showed the salmon patch, so rare in the acquired form, and common in

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the inherited. This eye was affected by iritis much more severely than the opposite one; it was more painful, and more obstinate in resistance to treatment. After the diagnosis was made the patient was put upon antisyphilitic treatment, inunctions of mercury, and iodide of potash internally. This was alternated by mixed treatment and mercury by the mouth until her teeth were touched upon several occasions. Of course hot applications, atropine and leeches were used to combat the iritis in particular.

The right eye improved so rapidly in three months that only one or two infiltrated points remained, but these particular points were not absorbed at all; while the left eye continued to be bad, the infiltration remained the same or became worse, and was in that unhappy condition when the patient passed out of my hands. It is interesting to note that I sent this patient to Mt. Clemens, Mich., at the end of about the fifth month. While she was there my treatment was modified by the physician who had her in charge. When she returned at the end of about three weeks, I found that her eyes were better in general. The right eye was so much improved that it was scarcely possible to see the infiltration at all, and the left eye seemed to be on the rapid road to recovery. Nevertheless, in a week or ten days after her return she developed a severe iritis of the left eye, the interstitial infiltration increased, and the patient was apparently worse than she was before, so far as the left eye was concerned. At this point she passed from under my observation. I satisfied myself by every known method that the inflammation of the cornea in this case was interstitial, and I can imagine no more typical picture of the disease.

Case II.—Several weeks before I saw the patient just referred to, a married woman of forty was brought to me by her family physician for consultation. Her husband, a man of forty-two or forty-three, had within the antecedent three months suffered from a stroke of left-sided hemiplegia and hemianæsthesia. The family physician stated that it was due to syphilis. The patient in question was an undersized, poorly nourished anemic individual, weighing about 115 pounds. She said that six months before her right eye had commenced to be inflamed, and that she had suffered greatly. From the description, I could see that she had a severe irido-cyclitis. On examining the right eye, I found a dense patch of infiltration downward and inward. The pupil was almost completely occluded, and a mass of organized lymph was observed. There was a slightly clear portion upward and outward, but other than this the pupil appeared to be tightly closed. She was unable to see anything except upward and outward in the direction of the aperture in the pupil, and she failed even to perceive a candle in a dark room in any other part of the field. From this I concluded that the posterior pole of the eye had been damaged. At the time that I saw her there was absolutely no sign of acute inflammation. The sclera was white, the eye was painless, and there was no pain upon pressure in the ciliary region. She regarded this eye as lost, and was brought to me by her physician on account of what he and she thought to be the commencement of the same process in the opposite eye. When I saw her the pupil of the left eye was slightly dilated with atropine; there was a pericorneal pinkness, lachrymation, photophobia, slight pain on pressure, and the optic disc was markedly hazy. Vision was 20-50, and she stated that it had fallen recently. There was no infiltration of the cornea, and the iris appeared to be bright. I concluded that the patient had had an acute irido-cyclitis in the right eye, exudative in character, which had extended backward and affected the choroid; and although the right eye was not painful to pressure, I strongly suspected that sympathetic ophthalmia was developing in the left eye. Since the right eye was practically useless as to sight, and the field was lacking in all except one limited area, I concluded that the right eye was of no value to her, and if the inflammation of the left eye was sympathetic in character it might be possible to prevent its loss by the removal of the right; and I suggested this in face of the fact that sympathetic irritation, if not inflammation, had already set in. I explained, however, to the family physician that the operation might not have any effect upon the course of the disease in the left eye, but that in my opinion it was the one chance to stop its progress. Although

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I had been informed that the husband of the woman had had a left hemiplegia, I nevertheless regarded the symptoms in the left eye as being the forerunner of an acute sympathetic ophthalmia, and that whatever the cause might be, it was likely that the left eye would go the course of the right. I determined, therefore, to remove the useless eye and await developments in the left. The patient was anæsthetized, and the right eye removed. The following day the pericorneal injection was gone from the left eye; likewise the photophobia and lachrymation, but the hazy condition of the disc and the surrounding retina still existed. Within a week the patient left the hospital, and the appearance of the optic disc and the retina was normal. I was unable to get the vision of that eye on account of the exceeding nervousness of the patient. The operation seemed to produce a powerful impression upon her nervous system. She returned at once to the country, and I saw nothing more of her for two weeks, when she appeared at my office with a typical case of commencing interstitial keratitis of the left eye. I assured myself by every known method of examination that the infiltration was in the substantia propria of the cornea. It was distinctly of the diffuse character, and was concentrated into a nucleus of greater density toward the outside. There was considerable redness of the sclera, lachrymation, photophobia and iritis. The infiltration finally extended over almost the entire cornea, reducing vision to movements of the hand or distinguishing light from darkness. The case pursued an unhappy course, with recurrent exaggerated exacerbations of the iritis, and finally at the end of the fifth month the dense infiltration became invaded by blood vessels from the periphery.

About two weeks after this observation she appeared at my office one morning with the epithelium over the densest portion of the infiltration broken down, and a button-like staphyloma projecting from it. It was obvious that the epithelium of the cornea had given away, and the eye was on the road to destruction. Throughout the entire course of this attack the pupil remained small, in spite of immense doses of atropine. The tension was at times increased, and would then recede and increase again, but I felt that it was necessary to keep the pupil as wide as possible, else the eye would certainly meet with the fate of its fellow. When the button-like staphyloma appeared, the question arose of what to do with that. I concluded to keep the patient in town and observe her the following morning; the staphyloma was then found to be twice the size it was the day before. I applied the actual cautery and burnt it down to the level of the surrounding cornea. Within forty-eight hours it had again commenced to bulge, when I applied the cautery once more. It then ceased to project, the epithelium re-covered the area, and the iritis got slightly better. I commenced to feed the patient on a strong diet, giving cod liver oil and porter in the middle of the day and at night. In the meantime the iodide had been discontinued for about a month, on account of the profound depression it produced on her nervous system and her digestion. From this time on the patient commenced to improve, having, however, repeated mild attacks of iritis, for which the atropine had to be again increased. At present, about seven months since I first saw her, there is a classical infiltration of interstitial keratitis, and the epithelium over the staphyloma appears to be entirely re-established. The pupil is larger, the eye is less irritated, the infiltration is slowly disappearing, and the patient is beginning to see the outlines of objects.

In view of the erratic course of the inflammation in this case, it may be argued that this is not strictly speaking a case of interstitial keratitis, but I have already affirmed and I repeat that the infiltration was in the deep layers of the cornea and nowhere else until the epithelium broke down over the densest portion of the infiltration. I feel absolutely sure that the breaking down of the epithelium and the formation of the staphyloma was due to the wretched condition of her nutrition, and that the recovery of the staphyloma was due not only to the actual cautery which was boldly applied at the proper time, but also to the withdrawal of the potash and the increase of nourishment. Her field of vision appears to be normal, and it is safe to say that the posterior chroroidal tract has not been involved. It is highly probable that the patient will recover with useful sight, in view of the progress which she has recently made.

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Case III.—I can only refer to this case in a superficial manner, as I saw the patient on only one occasion, but I then convinced myself beyond a doubt that the inflammation was in the substance proper of the cornea. He was a strong, stout man of twenty-seven years, who admitted syphilis contracted about eight years previously. The infiltration was at the center of the cornea, was marked, and was diffuse. I saw him for only a few moments at the clinic, and was not able to obtain his sight. There was no evidences of congenital syphilis. He had been under treatment for a number of weeks, but becoming dissatisfied, passed out of our hands.

In none of these cases was there any sign of the Hutchinson tooth, or any history of eye inflammation antedating that which I observed; nor did I see in any of the patients any marks indicating the pre-existence of ragades. None of them had the saddleback nose, and none of them had ozena, which I have so frequently observed in patients having saddleback noses. Just here I should like to remark that I have observed in every case of congenital interstitial keratitis a high vault to the pharynx. I have noted this for many years, and have come to regard it as one of the marked symptoms of congenital syphilis. I think it should be regarded as one of the classical symptoms of acquired syphilis.

There has been some discussion as to whether a person with congenital syphilis can acquire it. I can state positively that I have seen a case in which acquired syphilis was engrafted upon the congenital form.

Many years ago I had occasion to take care of a young girl and her brother; the former was eighteen years old, and the latter about twenty. The girl had the classical Hutchinson teeth and the young man strongly marked interstitial keratitis. The girl had never had any trouble with her eyes, and the brother had sound teeth. Nevertheless the young man acquired syphilis, admitted the fact, and when I was treating him had caries of the hard palate, together with other manifestations of acquired syphilis.

Mendel has likewise reported the case of a young man who had congenital syphilis and suffered considerably from it during the first years of his life. Later, at twenty-one years of age, he acquired syphilis and subsequently developed typical interstitial keratitis.

It is interesting to note in this connection that J. Herbert Fisher has expressed the opinion that interstitial keratitis from acquired syphilis is generally a tertiary lesion. It is well known that this form of keratitis is seen most usually in childhood, but is also well known to occur in mature life. For my part, I have seen it several times between forty and fifty, and frequently between thirty and forty.

Since my recent study of this subject, I have entertained the thought that possibly the cases of interstitial keratitis which occur at or about middle age, may, in the absence of signs of congenital taint, be assigned to the acquired one. It is at least a reasonable suggestion and worthy of investigation. Mr. Sidney Stephenson, in discussing this subject, has pointed out that of the 100 cases of this disease which have been reported, it has been shown that the average time of development after the primary lesion is 10.8 years. This supports in a strong way the suggestion made above. Nuel has expressed the opinion that interstitial keratitis is secondary to inflammation of the anterior uveal tract. I doubt the truth of this view, and it is certainly not supported by the weight of the evidence before us.

In my second case the whole of the uveal tract was involved in the right eye, while in the left the first signs were in the main in the posterior pole. Nevertheless there was severe involvement of the anterior uveal tract later. It would be safe to modify the opinions of Stephenson and Nuel by saying that the anterior uveal tract is always involved in this form of keratitis—a thing which has been recognized already by all.

Members of this Society, I believe, will be interested to know that this disease has been produced in the lower animals by inoculations from chancres of the human being, particularly in rabbits and monkeys. The spirochetæ have been found in the lesions produced. In this connection I believe it will be pertinent to mention a case of eye disease which I have recently seen in one of the lower animals—namely, a dog.

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A gentleman who possesses a very fine animal, requested me to give him some advice about the condition of his dog's eyes, which, he said, had been described as cataract by a veterinary. On examining the animal's eyes I found a marked case of interstitial keratitis on each side; the cornea presented the stippled appearance which is characteristic of the diffuse form; the light reflex passed unbroken over the entire cornea, resembling the reflex from fine china. The entire cornea was involved on each side, so that the iris and pupil could not be distinctly seen. On the left cornea there was a yellowish white patch to the outer side which strongly resembled the so-called salmon patch frequently found in the congenital form. There were no blood vessels on or in the cornea, and there was no congestion of the sclera. The latter was perfectly white. I used atropine and two per cent. dionin for several weeks, and thought I perceived some improvement, but as the dog's master left the city at that time the case passed from my hands. I sent it to a colleague in a neighboring city, but did not hear from him. I do not know whether he saw the animal, or considered the case beneath his dignity. On the 30th day of September the dog's master sent him to me again. After the treatment had been continued for about three months I found that both eyes had markedly improved, the left one especially. In the latter the cornea had cleared entirely at the periphery, while the salmon patch had lost the yellow tinge, and had become thinner. The iris and pupil could be clearly seen. On the left side the cornea was not as clear as on the right, but nevertheless it had improved. That this was a case of interstitial keratitis I assured myself by the bifocal microscope and all the other methods by which we assure ourselves of the presence of inflammatory products beneath the surface of the cornea. The respects in which the case differed from cases of human interstitial keratitis were the absence of blood vessels in the cornea, of iritis and of pericorneal inflammation and injection—in short, the signs of acute inflammation. It is interesting to note the marked improvement in the infiltration following the treatment.

There has been some discussion as to whether the true salmon patch ever occurs in the acquired form of this disease. Trousseau has said that it never occurs, and G. A. Critchett was never able to satisfy himself that he had ever seen it. J. B. Lawford and Marlow have reported indubitable cases of it. It was present in my first case, and it certainly was present in the case of the dog, if that case can be classed amongst the others. There seems to be no doubt that the salmon patch of Hutchinson occurs in this form of the disease. The prognosis in the congenital form is generally good, but I think the prognosis in the acquired should be guarded. Mr. Griffith, in discussing Mr. Lawford's case, said that one of his cases had terminated with practical loss of sight—with simple preception of light. The authenticity of my second case may be doubted by some, but for my part I feel satisfied as to the correctness of the diagnosis by reason of the physical findings and the history of the husband's case. The otherwise erratic course was due to other causes. I believe that the first eye had been lost by this disease, in view of the subsequent developments, and that the irido-cyclitis had been a part of the interstitial keratitis. Having come to this conclusion, the question arises whether it was good practice to have removed the first eye. My defense is that the right eye was almost totally blind from what was evidently an irido-cyclitis plastica, and that the left one showed the signs of sympathetic inflammation. When I saw this disappear at once after the enucleation, I congratulated myself on my good practice. The subsequent events proved me wrong. The enucleation was not classically indicated, yet I believe it was of advantage to the left eye in the severe inflammation which supervened. This is at least a comforting reflection.

Some have maintained that the two forms can be differentiated from one another, but for my part I cannot hold this view. My first case, in which the patient confessed syphilis, was absolutely classical from my standpoint. As I have already suggested, the great probability is that many cases which have been put down as congenital interstitial keratitis are in reality the acquired form, and I repeat I believe that many, if not all, of those cases which occur late in life are of the acquired form. However, I do not believe

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that the two forms can be separated from one another by virtue of the clinical picture. The recent interest which has been shown in this subject doubtless will result in more cases of the acquired form being reported.

It has been suggested that the differential diagnosis between this disease and tuberculous keratitis is difficult. Certainly there are many points of similarity, but the history of the case and the tuberculin reaction should be the main reliance in settling the diagnosis.

It is difficult to describe the pathology of interstitial keratitis. Mr. J. Herbert Parsons, in his classic, "The Pathology of the Eye," states that it is difficult to determine the exact anatomy of the disease. And when he says that, the last word has been said up to this time. Suffice it to say that it is an infiltration and inflammation of the substance proper of the cornea; but, as Mr. Parsons further says, the microscopic findings have been few, and have been complicated by other conditions. He also remarks that the disease is rare, and is usually restricted to one eye.

It is fair to conclude these reflections by saying that interstitial keratitis may occur as a result of acquired syphilis; that it is in a more or less late lesion; that as a rule it is restricted to one eye; that it is practically identical in its clinical aspect with the congenital form; that its pathology is rather indeterminate, and that the prognosis is generally good.

11 *East Forty-eighth Street.*

REMARKS ON DIRECT INSPECTION OF THE WINDPIPE, GULLET AND STOMACH.

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.,

Professor of Ophthalmology and Associate Professor Rhinology, Laryngology and Otology, University College of Medicine.

In presenting to your consideration the most approved and recent method of investigating pathological conditions of the windpipe and swallowing tube, I am well aware that to many of you there is no novelty in these procedures, but there are still many who have not had an opportunity to become familiar with them, and to whom, therefore, they may prove a subject of interest.

You are all acquainted with the indirect means of examining the larynx by reflecting its image in a mirror held in the back of the mouth. Some of you have also seen the œsophagus inspected in a similar way after introducing the œsophagoscope. Direct inspection, however, of the larynx, bronchial tubes, œsophagus and stomach, by passing hollow tubes with their distal end sufficiently illuminated by an electric lamp to see the condition of their mucous lining, is an advance in this kind of work that very few of you have seen, and fewer have attempted.

My personal experience with these instruments has not been as yet very extensive, but still both Dr. Dunn and I have used them sufficiently often to be able to give you a good idea of their practical value for diagnosis, the application of remedies, the removal of foreign bodies, etc.

This can easily be demonstrated both on dogs and on human subjects, as you can see at my clinic tomorrow morning at 9 o'clock. In short, thick-necked individuals some difficulty is occasionally met with, but an experienced operator will find very little trouble in most subjects who have been put thoroughly under the influence of a general anæsthetic, and in many it is equally easy with local anæsthesia alone.

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Asepsis.—The strictest aseptic technic must be followed to avoid conveying any communicable disease to the patient. Absolute asepsis of the field is impossible, but the mouth should be made as sterile as possible with 30% solution of alcohol.

Anæsthesia.—*For laryngoscopy*, local anæsthesia is usually sufficient except in very young children. First apply a 4% solution of cocaine on a cotton holder, and in a few minutes a 10% solution should be thoroughly applied to the epiglottis and contiguous tissues. The tubular speculum is then passed behind the epiglottis, and a 20% solution applied to the larynx itself. In children for any operation, in the absence of dyspnœa, chloroform is preferable.

For bronchoscopy, a dose of morphia should be given, or an injection of morphia, scopolamin and cactin, an hour before applying the cocaine, helps considerably—the objection being that it may destroy the cough reflex which in some cases might be unsafe. Cocaine is used as in laryngoscopy, and as the tube is passed into the trachea and bronchi, cocaine and adrenalin are applied to the mucous lining by dropping it down the tube with a pipette.

In passing the tube through the cords we must watch for the inspiratory excursion apart of the cords and push it through quickly. Otherwise, if the tube touches the cords when they are coming together in expiration they will remain closed, and the tube will not pass as easily. Passing the tube through a tracheal opening is easier, and is called "lower bronchoscopy."

Sometimes secretions prove a difficulty, but not in all cases, and they must be pumped away with the aspirator. In nervous patients the sensation of suffocation or smothering at first is a difficulty that is overcome by a little practice, and may be due to spasm of the larynx or to pushing the spatula in too far.

For upper bronchoscopy, however, in most cases general anæsthesia is preferable, but the danger of arrest of respiration should be provided for by having the tracheotomy instruments at hand for an immediate opening of the trachea, as it is sometimes impossible to start up the respiration again without doing this operation.

For œsophagoscopy apply cocaine the same as for laryngoscopy. Examine the upper part of the œsophagus with the tubular speculum, passing it down behind the arytenoid cartilages, which lie against the posterior-pharynx, and between them appears not an opening, but a horizontal depression, into which the spatula is passed, and pulls the cricoid cartilage forward, exposing the pyriform sinus and the upper opening of the œsophagus. The tube is passed into the œsophagus by way of the right pyriform sinus. Cocaine is sufficient to do away with pain, but does not prevent retching like a general anæsthetic. Morphia helps much to do this.

For gastroscopy profound general anæsthesia is necessary, as it is only in this way we can get rid of the retching, which causes the diaphragm to clamp the tube, which in turn may be dangerous with the tube in the stomach. Some cases do not take ether well, and chloroform may be substituted.

For both œsophagoscopy and gastroscopy the stomach should be empty and the mouth clean. No food should be allowed for at least twelve hours prior to passing the tube. Grease tube with vaseline, pass left forefinger into glosso-epiglottic fossa behind the pharyngo-epiglottic fold, and if possible into the right pyriform sinus. Lifting upward in the dorsal position, or forward if sitting, the tube is passed behind the finger just behind the cricoid, which is lifted by traction on the tissues.

If there is any difficulty the instrument may be threaded over an œsophageal-bougie, but not farther than just beyond the cricoid cartilage, as after that it must be guided by sight with the illumination of the lamp, as otherwise damage to possibly diseased tissues may be done.

The position of the head is all important in attempting these examinations, and a skilled assistant who understands how to hold the head properly is absolutely necessary to avoid bungling the work and wearing out the patient. This is especially true in œsophagoscopy, as the mouth, pharynx and œsophagus must be brought into a straight line by holding the head steadily in extreme tension with the mouth widely open. This is known as the Boyce position from its description by Dr. John W. Boyce, of Pittsburg.

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It is to Dr. Boyce and Dr. Chavalier Jackson that I am indebted for my first experience in this line by seeing their manipulations of these instruments on both dogs and human beings.

Dr. Jackson has done more than anyone else in America for the elucidation of the technique of direct laryngoscopy, bronchoscopy and œsophagoscopy, and the instruments here exhibited are his designs. The first direct examination of the œsophagus was done by Kussmaul with a urethroscope in 1868, but Mikulicz in 1881 was the first to do so with a satisfactory optic apparatus, which he also introduced into the stomach.

Prof. Gustave Killian in 1897 removed a foreign body from a bronchus, and later improved on his apparatus and technique. He may be considered the first successful explorer of this field of work.

The practical value of tracheoscopy, bronchcoscopy, œsophagoscopy and gastroscopy cannot be overestimated, and to be appreciated one must see its actual demonstration.

The examination of the trachea with the laryngeal mirror is satisfactory only in exceptional cases, whilst the bronchial tubes, œsophagus and stomach have been to all intents and purposes sealed books.

With these instruments every spot in the larynx, trachea, primary bronchial tubes, œsophagus, and most of the stomach can be inspected by sight with satisfactory illumination and all changes from a normal condition studied carefully, thus enabling us to make an accurate diagnosis of conditions that heretofore were involved in obscurity.

In the larynx, trachea and bronchial tubes we can directly apply appropriate remedies to diseased areas, such as ulcers, or perform such operations as removal of foreign bodies, scarification of edematous tissues for relief of dysphœa, opening of abscesses, excising neoplasms, etc.

In the œsophagus we are no longer blindly groping with sounds and bougies to decide the cause of an inability to swallow, but can determine the exact pathological condition present, whether an inflammatory alteration, or ulceration, a neoplasm—benign or malignant—a constriction or dilatation, or a foreign body.

The treatment of œsophageal stricture has been entirely revolutionized by the œsophagoscope, as no surgeon is any longer justified in attempting the dilatation of a stricture until he has by direct inspection determined its cause and the condition of the surrounding structures, and whatever treatment he decides upon should be carried on by sight.

In the stomach the walls can be thoroughly examined, except at the extreme pyloric end, and the location and extent of an ulcer, or the size of a growth, or other pathological alteration of its mucosa determined, thus giving valuable aid in diagnosis to both physician and surgeon.

Time does not admit of going into this subject in detail, but I trust these few remarks may awaken in you sufficient interest to make you look farther into it. You will not, however, find it any easy matter to learn the use of these instruments. It takes much time and patience and constant practice to become expert in their manipulation and familiar with the normal conditions of the windpipe and gullet so as to be able to recognize any deviation therefrom.

For the practical demonstration of the use of these instruments I will, with Dr. Dunn's assistance, give a clinic to-morrow (Thursday) morning at 9 o'clock in the Virginia Hospital amphitheatre, and show both upper and lower trachea-bronchoscopy in two clinical cases and œsophagoscopy and gastroscopy on dogs, as just at present I have no œsophageal case under treatment.

Note.—Dr. White, assisted by Dr. Dunn, gave a clinic at Virginia Hospital, at which he demonstrated the use of the tracheoscope and bronchoscope on patients and the gastroscope on dogs. Each member of the Society present was afforded an opportunity of examining the cases.

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THE MININ LIGHT.

By MARK W. PEYSER, M. D., Richmond, Va.

Secretary Richmond Academy of Medicine and Surgery; Electrotherapist and Radiologist, Retreat for Sick; Examiner for Denver National Home for Consumptives, etc.

The therapeutic success attendant upon the employment of the X-Rays and Finsen light has led to extensive investigations of their physiologic action and to the invention by many experimenters of various apparatuses in the hope that they would prove as great, if not more, benefit, and at the same time be less bulky and complicated, more easily handled and less expensive than the machines heretofore required.

Many modifications of the original Finsen light are in the hands of the profession, and some have partly achieved the end sought, though for various reasons they cannot be employed by the general practitioner. A very simple apparatus, and yet one indicated in the treatment of many minor surgical affections as well as effective in the treatment of lupus, appealing, therefore, to the general practitioner, is the Minin or Russian Violet light, which consists of a series of blue-violet incandescent lamps—not the ordinary bulb, pigment-dipped, but blown from the true colored glass—furnished with reflectors, for, as Freund says, concave mirrors serve to concentrate greater quantities of light than can be done with lenses.

In employing these rays the light is placed at such a distance from the part to be exposed that the heat is barely felt, and the least increase in distance would cause the disappearance of the sensation entirely. This precaution is taken because, as noted by Finsen, light of lower frequencies, when concentrated, causes combustion of the tissues; and, too, it meets the objection offered by some authorities that the effect is due to heat and not to the actinic rays. This will be referred to later.

The size of the lamp used depends on that of the area to be treated and the nature of the affection. Exposures, given every day or every other day, are from ten to thirty minutes' duration, according to the effect produced.

It has been shown that the Minin light possesses the following properties: (1) Anæsthesia; (2) hastening absorption of effusions; (3) producing regeneration of the skin with formation of but little scar tissue; (4) astringency. These are accompanied by a slight rise in temperature.

Minin demonstrated to his own satisfaction the anæsthetic power in cases of gonorrheal arthritis, lacerations and other traumata. Allen, in his work on *Radiotherapy*—reporting three minor operations performed painlessly under the influence of the Violet rays by Tracy, namely, removal of a sebaceous cyst from the scalp, a subcutaneous abscess from the thumb and an inch square slough from the palm of the hand; and two by Brockbank, namely, suturing an incised wound of the forearm which had exposed the tendons, and removal of a fatty tumor from below the breast—suggests that as these lamps do not produce any ultra-violet rays and transmit a very small amount of violet and blue rays, the anæsthesia was due to a strong mental effect.

On the other hand, Freund says that while the chemical or photographic efficacy of the incandescent lamp is slight, it may be materially increased by strengthening the current; and it is very evident that he is referring to the ordinary and not the blue-violet bulb, which produces a perceptible fluorescence in kerosene oil and solution of quinine. It is also evident that Freund is dealing with lamps of low voltage, and not that obtained through commercial sources. Apropos, I have noticed that the comparatively new tantalum light causes a similar fluorescence, but in lower degree. If it could be furnished with blue-violet glass it would provide a more efficacious therapeutic agent than does the ordinary lamp.

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As to the absorption of the ultra-violet rays in the passage of light through glass, I again quote Freund, who says that "the favorable results obtained by Finsen with his old apparatus (glass lens and blue-light filters) are proof that it is not so very important that the irradiation should be with pure ultra-violet rays."

Recurring to the anæsthesia, it is well to say that in some instances, instead of disappearing, the pain persists and may even increase after the first one or two treatments, but this is only temporary.

The absorptive effect of the rays was prettily shown in a case of gonorrheal bubo. Under their influence, within a week after incision healing had occurred, the discharge having ceased and the gland reduced markedly. While I have been told that in this affection recovery may ensue in from ten days to two weeks, I have yet to see a case of my own in which less than three weeks was needed for what is usually regarded as a cure. I recall one which continued so long that, in disgust, I asked a surgeon what must I next use to hasten recovery; his directions were short, for he replied, "Patience."

An illustration of the regenerating influence of the violet rays is seen in the following instance: Young man had his scalp cut to the bone by a piece of falling slate. After the wound was cleaned as thoroughly as possible it was sutured. When the patient was seen again, five days later, the scalp was found to be bulging. As the sutures were removed pus exuded through some of the stitch holes. The wound was opened for a distance of an inch and a quantity of pus welled out. After thorough washing, which brought out more slate particles, it was found that the skull was denuded of its periosteum for about a square inch. Gauze was inserted for drainage and the wound dressed. This proceeding was continued for two weeks when, but little improvement being manifest in the restoration of the periosteum, the Minin light was used. After a twenty-minutes sitting, the drain was inserted, and for the first time unaccompanied by pain. Only two treatments more were necessary to cause complete regeneration of the periosteum, and the scalp wound was allowed to heal over.

The fact that under the influence of the Minin light we have a vasoconstriction instead of the hyperemia produced by the regular electric incandescent lamp, is evidence of the influence of some other energy.

At the present time there is under observation a patient with tibial ulcer of five weeks' standing. Wet dressings with strapping were of little avail. After the third exposure to the violet rays of the Minin light there is a noticeable leveling of the edges and diminution in size. When the light is applied oozing ceases, and the color is observed to change from a blue to a rosy red and then to pink. Pain has diminished considerably.

The healing process in a case of lupus is thus described by Minin: "We can observe first of all, the absorption of the infiltration in the edges and in the depth of the ulcer, creating the impression that the ulcer is leveling itself and becoming smaller. In the course of repeated phototherapeutic treatments the ulceration covers itself each time with a kind of very thin membrane and becomes smaller; its edges, covered again with a skin of normal color and elasticity, approach each other more and more, and at last are separated only by a cicatrix, which completes the restitution of the tissues.

"If there exists a cicatrix in the place of a very extended ulceration, it will be very superficial and minimized, not one that "ties down the edges of the normal skin like a large ribbon penetrating all the layers of the integument."

Treatment with the violet rays is indicated for pain of all kinds, except in some cases of neuralgia. As mentioned, they may temporarily increase the pain. They are also indicated in ulcers; solutions of continuity of the skin with infection, the rays having a bactericidal action, though not so marked as either the Finsen or X-rays; in effusions and chronic skin diseases, including syphilides and tuberculides.

They are contraindicated in hysteria, and in the case of young anemic girls may induce that affection. Applications too frequent or too prolonged provoke general debility, which condition, resulting from other diseases, may

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be benefited by properly directed applications of the rays. Some patients develop great fatigue while under their influence.

Minin states that it is dangerous to subject to them aged patients with arthritis of the extremities, because of the possibility of cerebral hemorrhage, and adds that he can offer no satisfactory explanation of this. Finally, they are contraindicated in all acute cutaneous eruptions.

As to general chromotherapy, Akopenko, quoted by Freund, says that the violet light is depressing. The mental attitude becomes melancholy, dreamy; after sometime headache is felt. The psychical processes are checked and become very slow, whilst the feeling of general depression becomes almost unbearable. This statement is endorsed by many other investigators, and Ponza, trying it practically, noticed that persons affected with melancholia, after a short time (three to twenty-four hours) in the red room, became cheerful and chatty and were ready to take food, whilst the blue room had a quieting effect on maniacs who had previously required the straight-jacket.

303 Twelfth Street, North.

THE PHYSIOLOGICAL ACTION OF ELECTRICAL CURRENTS—A BRIEF FOR THEIR INTELLIGENT USE IN THERAPEUTICS.

By W. H. Wallace, M. D., Brooklyn, N. Y.

For years when a paper on electricity has been read in medical meetings, a look of boredom or worse has been plainly seen on a considerable number of the members who were unable to escape the infliction. That much of this antagonism, or shall I say antipathy, has been deserved I will not deny, for much of the discredit that has come on electro-therapeutics has been due to the absurd claims of rudimentary enthusiasts or to the manufacturers of apparatus who would guarantee you to cure anything under heaven without knowledge if you only bought their special equipments. That time has not even yet passed, but we are progressing.

Speaking recently with one of our most intelligent medical teachers in Brooklyn, he said: "Doctor, we do not deny the very great good often done by electrical currents, but you can't expect to get thinking men to have much faith in them till you show how they do their work; in other words, demonstrate their physiological action, explain their effect, if any, on metabolism and nerve tissues, and do away with empiricism; then, and not till then, will we sit up and take notice."

The purpose of this paper is to show somewhat of this action. As a matter of fact, I think we can demonstrate that the tissues of the body always respond to certain currents in the same way, which is not true of drugs, and I believe we can go farther than any drug therapeutist has ever gone in explaining the chemico-physiological action on living tissues. Comparisons are odious, but let us contrast the action of digitalis and static insulation, a current that many of our nerve specialists say has no action but psychic. It does not take much nerve to say that, for there be but few to refute them. My old teacher of therapeutics taught with much emphasis that the effect of digitalis was on the circulatory system; that it raised arterial pressure and slowed the heart; that the increased blood pressure was due to stimulation of cardiac ganglia and of the muscle fibers of the heart itself, and that the slowing was due to a stimulation of the pneumogastric nerve centers and the peripheral ends of the vagus. Now, that is a fair sample of drug technique as it is or was taught. Now for our static insulation:

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The patient being connected to the positive end of a static machine and placed on an insulated platform, negative end of machine grounded, the machine is speeded up to generate a ten or twelve-inch spark; you are literally pumping into that patient—mind into, not through—hundreds of thousands of volts of electricity. This may produce a psychic effect—probably does—but it also produces a powerful physiological effect. The most marked of these are a reduction of arterial pressure, the slowing of the pulse, with relief of pain, if any. These effects are produced, I believe, by a sedative and stimulating effect on the vagus; the capillaries are dilated, oxygen is set free in the tissues and oxidation or catabolism sets free waste, to be carried off by the lymphatics; congestion is relieved, secretion and excretion are stimulated simply because nascent oxygen is evolved about your electric terminals, and the system is bathed in it and it is taken up by the blood and circulates as oxy-hemoglobin.

One of the reasons the heart beats is because of the need of the tissues for oxygen. Here it is supplied without the intervention of the lungs, and the heart slows down and the kidneys work overtime, and, in my experience, the specific gravity of the urine is always increased. Whatever may be the ultimate action by which creatin is converted into urea, this much is assured; it is an oxidizing process, and whenever there is a deficiency of oxy-hemoglobin in the tissues there will be a retention of some of the partly prepared elements of metabolism, and the cry of the tissues is for more oxygen, and nothing supplies it so quickly as high frequency or static electricity.

Roughly, then, static insulation slows the heart, decreases blood pressure by stimulation of the vaso-motor system, and by supplying oxygen direct to the tissues lessens the work of the heart, which slows because of the fact that part of its work and function is being done by the electricity.

When we come to high frequency currents we have the same effect, but it is local and more powerful to the particular part applied to, and the systemic effect is diminished in the same proportion. If you doubt that nascent oxygen is evolved around the patient, smell the hair after twenty minutes of the crown breeze, and I think you will be convinced, if you are familiar with the odor of ozone.

I will now take up the galvanic current, one that has been much neglected of late, while the faddists who run after new gods have been exploiting high frequency.

As to what galvanism is we will not inquire. That it is a uni-directional force that readily lends itself to the use of man, is easily controlled and very potent for good or evil, depending on knowledge of its action, is an established fact. I wish here to contrast for you the two poles (after Neiswanger) of a galvanic battery so that later you may remember why we do certain things:

Positive—Acid, oxygen, stops bleeding, sedative, hardens tissue, acid caustic, vaso constrictor.

Negative—Alkaline, hydrogen, increases bleeding, produces hypersensitiveness, liquifies and disintegrates, alkaline caustic, vaso dilator.

From this you may readily see how the action of current varies according to which pole you use.

The average man associates electricity and pain almost unconsciously, and most doctors think that electricity is only of use in nerve troubles and to relieve pain. This is far from being truth; but let us see how it does relieve.

Pain is a sensation due to pressure on a nerve or to chemical irritation or overstimulation of the nerve itself. We must remember that the normal tissues and fluids of the body are alkaline or neutral in reaction. Normal urine is acid in reaction. The processes of anabolism, or building up, then, is an alkaline one; the katabolism, or breaking down, is an acid one, as evidenced by the principles of waste. When something interferes with the nicely adjusted balance you have a sharp cry (pain) from the affected part, and you may know that you have an excessive alkaline condition, the beginning of an inflammation possibly, certainly an interference with the evenly balanced scale of normality.

I think it is true that most of the faults of nutrition are not due to faulty building up so much as to lack of proper breaking down or destruction of

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what has been absorbed, and proper oxidation and excretion lag behind instead of going hand in hand with absorption. Another point here is that through improper oxidation organs are caused to excrete products that they were never intended to excrete; also there was lost to the economy building-up products in which a certain amount of physiological energy has been expended to convert them into *almost* assimilative form, but which at the last moment, for want of the ultimate oxidizing factor, were thrust out by protesting excretory organs.

Now, if it is granted that painful conditions are caused by, or are a sequence of, an excessive alkaline condition, it does not take a very clever head to see that the acid positive pole of the galvanic battery will relieve it, because it is an oxygen maker. It oxidizes the principles of waste, converts (locally) an alkaline condition to an acid one, and by its constrictive action on the vaso-motor nerves lessens the amount of blood to the part till the temporary inflammation has subsided, and rest, nature's great restorer, completes what has been so well begun.

The negative pole I will not discuss because its action is exactly opposite to what has been described, and we use it mostly as a destructive agent. In passing, I will say that when used in careful hands, and in exact conformity with Newman's law, it is the one sure, safe, painless and bloodless method of curing strictures of the urethra.

The faradic current I will dismiss with but the statement that its effects are nearly altogether mechanical, and its indiscriminate use, both by the profession and the laity, has done more harm than good, and has done more to discredit electrotherapy than any other one thing. Properly used in certain cases of paralysis and atrophy, not going to the degree of producing painful contractures, it is useful, but probably less so than vibration or massage. The sedative and pain-relieving quality we get from the so-called high tension faradic batteries is, I believe, due to nothing but a tiring out of the muscle fibers from the rapid vibration to which they are subjected.

The sinusoidal current is one that very much may be expected from when we can get an apparatus that gives us the true sine wave. If there is one such on the market I have yet to see it, but even with the imperfect current we now get the regular oscillating from pole to pole sets up a stimulation that hastens the regeneration of paralyzed nerves more than any other current or method with which I am acquainted. I have had some remarkable results in optic atrophy, using the combined sinusoidal and high frequency currents, but I have not had a large enough series of cases to report on as yet.

Several factors have united to give electricity a black eye with the profession. One is, as I have stated, that overzealous enthusiasts have heralded it as a panacea for all the ills to which man is heir. Others with insufficient training and no knowledge of technique got no results or possibly did harm. It requires a considerable outlay for apparatus; its field is mostly in chronic cases that take weeks or months of treatment, and it is not always possible to hold patients. Each treatment must be at least half an hour, and sometimes an hour, and except a man devotes himself to that line of work and is paid in proportion he cannot afford to spend the time. Anyone who gives less than fifteen minutes of static insulation might as well give none. If you have not time to devote to your patient, do not give it at all, and if you have not a definite knowledge of the pathological condition you are going to try to relieve and a knowledge of what you expect your current to do, leave it alone. Correct treatment can only be based on careful diagnosis.

To recapitulate, then, electricity is but a means of changing and hastening chemical reactions in the system, just as it does out of the system. If they can (and they do) hasten the process of tanning hides by electric currents, certainly you can hasten the transformation of creatin into urea in the system and hasten the other processes of metabolism and catabolism.

We should never forget that electricity is a form of molecular activity and very potent for good or evil; and though it has well-defined limitations, it is the greatest oxidizing agent ever used in therapeutics.

196 Prospect Park, West.

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DISCUSSION.

DR. MARK W. PEYSER, *Richmond:* Sometime ago I called attention to the hyperemic effect of the negative galvanic pole as a substitute for Bier's hyperemia when that form was not available. Possibly in some cases of tuberculosis the static current would be excellent, but if there is no hemoglobin to take up the oxygen it is hardly worth while to fool the patient with the hope that the static current will do him any good.

DR. W. H. WALLACE, *Brooklyn, N. Y.*, said, in conclusion, that the negative pole is a destructive agent and an alkaline caustic. The static current does the same thing in a different way. To use it you must have something to build on. An anemic patient, with gastric ulcer, for instance, not able to take nutrition, will not be built up by electricity because the elements for building are not there. There is something more needed than oxygen.

THE VALUE OF THE X-RAYS IN CHEST DIAGNOSIS.

By A. L. GRAY, M. D., Richmond, Va.

Professor of Physiology, University College of Medicine; in charge of X-ray Department, and Visiting Physician, Virginia Hospital.

In the determination of conditions existing within the thorax every procedure that will add to our very imperfect methods should be accorded a most hearty welcome.

While there are specialists who can, after years of the most assidous application and wide experience in chest examinations, recognize very slight abnormalities with a wonderful degree of accuracy, such men are rare, and often their findings are not treated with the respect due them, for the reason that the doctor referring the case is not sufficiently trained in physical diagnosis, and cannot himself detect the points elicited by the chest specialist.

There are conditions that, by reason of their size and location, even the most skilled physical diagnostician cannot possibly ascertain, while their recognition at the onset may mean the arrest of the disease before it is beyond control.

It is my desire to call to your attention the applications of the X-rays as an aid in discovering with accuracy points difficult or impossible of demonstration otherwise.

Thoracic Aneurysms.—Although an early diagnosis rarely, if ever, enables a complete cure to be effected, the patient's habits of living may be so modified and treatment so instituted in consequence thereof, that life may be prolonged or even the progress of the aneurysm arrested.

A thoracic aneurysm found by the X-rays in a woman in the sixth month of pregnancy caused me to advise the induction of miscarriage. The operation was successfully performed, and the patient spared a probable sudden death during labor.

Aneurysms have been often found when their existence had never been suspected, and the radiograph was made for an entirely different reason.

Pain in the region of the large blood vessels, persistent aphonia, huskiness of the voice, bronchorrhœa, areas of deep-seated tenderness near the sternal or in interscapular regions, when the cause is not clear, should always be suggestive of thoracic aneurysm.

Pleuritic Effusions.—Though these are usually easy of diagnosis, they are sometimes very difficult. It has been my fortune to test the utility of the

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X-rays in a considerable number of cases of hydrothorax and pyothorax and in a single case of hæmothorax, the result of a bullet wound.

In hydrothorax, which is the most common of these, the level of the fluid, if it is not walled off, shows distinctly in the radiograph, usually as a fairly sharply defined line above which are the shadows of more or less normal lung tissue, while below is the denser and more diffused shadow due to the greater difficulty encountered by the X-rays in penetrating the fluid. The ribs appear much less distinct.

In localized pleuritic effusion, where adhesions have formed a distinct wall which encloses the fluid, the thickened pleura, as well as the fluid, are generally easily recognized. If the effusion is great there appears in the lung tissue itself, especially in that portion near the fluid, an increased density due to compression.

What has been said of hydrothorax may likewise be said of empyema, except that the pus shadow is more dense than in hydrothorax, and often the shadows of the ribs are entirely obliterated.

Pneumothorax is readily determined by the absence at the site of the air, of even the normal shadow of the lung.

Abscesses within the lungs are distinguishable by appearing as very dense, generally single areas shading off into the surrounding lung tissue.

A difficulty which occasionally presents itself is the risk that the patient may undergo in being placed in the upright position necessary in diagnosing general effusions. Rarely indeed will a case be seen in which the danger would be too great to permit the sitting posture in bed for the short time necessary to take the picture. Such a condition, however, does sometimes occur and renders the diagnosis of free fluid quite difficult.

Tumors and Enlarged Glands.—Tumors of the lung tissue generally produce dense, often sharply defined areas of more or less irregular outline, not infrequently multilocular. They may be distinguished from abscesses, which they most resemble, by the absence of fever and by the result of a blood examination.

Mediastinal and bronchial glands appear as rounded or oval shadows with clear-cut borders. They may, if large, be mistaken for small aneurysms, and must be distinguished, if there is doubt, by fluoroscopic examination, when the expansile pulsations may be seen.

Tuberculosis.—It is in tuberculosis that the X-rays have begun to open a new field. X-ray operators everywhere have in the last few years turned their special attention to the early recognition of this disease by radiographs. Many cases have been reported in which the chest specialist has failed to determine any physical signs—long before the appearance of the bacilli in the sputa—in which an unqualified diagnosis of pulmonary tuberculosis was made and the subsequent course of the disease verified the findings.

With the present almost instantaneous work that the recent machines are capable of doing, an exposure may be made while the breath is held, and the smallest area of consolidation will appear distinctly on the picture. Isolated tubercles, minute calcified glands and thickening at the roots of the lungs can be clearly demonstrated. In advanced tuberculosis, in which there is considerable consolidation, the areas may be studied and progress or recession of the disease determined by comparing radiographs made from time to time. Cavities in the lungs, their size, location, and, whether or not they are being walled off, are all points that may be shown by a good radiograph.

In chest examinations for tuberculosis it is not sufficient, as is often done, to make a single picture with the plate behind the thorax, for images of small solid areas in the anterior portion of the lungs may be indistinct by reason of their distance from the plate.

In order to obtain a clear impression, it is of equal importance that a picture be made with the plate in front.

Restricted motion to the diaphragm on the affected side (Williams' sign), which was formerly considered of great value in the diagnosis of early tuberculosis, has been proven to be unreliable. This is easily demonstrable by an X-ray examination, but is not always present in the earliest manifestations.

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The heart may also be outlined, and its size and position ascertained. This is best done by the employment of the ortho-diagraph, which also enables the diaphragm and other structures to be most accurately charted.

The location of foreign bodies in the œsophagus and respiratory passages is of such frequent occurrence as to require no comment in this necessarily brief paper.

312 East Franklin Street.

THE X-RAY IN THE TREATMENT OF SKIN DISEASES.

By THOMAS W. MURRELL, M. D., Richmond, Va.

Lecturer on Dermatology and Syphilis, University College of Medicine, etc.

The X-ray at this time is an accepted and established branch of the methods of treating disease, and is no doubt one of the most powerful single agents at our command. However, it is not my purpose to act in the capacity of an attorney for the X-ray, for there is no need of one; but there is a need of a judge.

A technical discussion of the X-ray produces one or two effects on the average doctor. I do not mean average in intellect, but that wonderful man, who must be ready to lay a thousand different arrows to his bow to meet a thousand ills. Under the battery fire of technical obscurities, either he soon loses interest, and the discussion sweeping over him passes on like the incoming tide, or should he ride the crest of the wave, he is awed at the possible miracles of the future.

We are only on the threshold of great works that will be consummated when we learn the entire biological effects of the ray. But can we wait? Our patients live to-day, and it is to-day that we must treat them.

Admitting that our present knowledge is imperfect, yet it has grown great enough to eliminate the X-ray from the field of the faddist and the hands of the empiricist. It has a fairly well-defined action, and should be used only when that action is desired. Even staid, dry-as-dust doctors seem ready to believe in fairies and magic, and would like to regard the greenish globe as something possessing occult powers, but, in the large sense, there is only one action in the X-rays, and, in a word, that is *destructive*.

Like all other destructive agents in its mildest application, only a slight stimulation will be produced; carried further, atrophy of gland tissue results; and still further, loss of tissue, the dreaded X-ray burn.

The proper status of any case must be determined by consideration of authorities and personal evidence; and I wish, first, to look into the field of radiography, then dermatology, and, finally, cite a few cases with deductions therefrom. It is not enough to know that the X-ray will cure; we should know whether it is better than other methods. There are dangers in this wonderful light, and these dangers can only be guarded against by a special technique. If a salve will do as well it is our duty to use it, for when the choice of methods lies in the balance the doctor should consider not only the patient's welfare, but his convenience as well.

In the earlier days of the X-ray it was tried on nearly every condition, and most books that have been published on radiography are clinical in character. They are the collected reports of different men published in journals and hospital reports, and in the great majority of cases are decidedly partisan. That is, they are all from the X-ray standpoint, and written to prove a single value and not a comparative value. For these reasons such communications are of much more value in a work on radiography than one on dermatology.

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In a perusal of three standard authorities on radiography I found agreement and recommendation of the ray in the treatment of fourteen different diseases, named in the order of their recommendation. They are as follows: (1) Malignant degenerations and growths; (2) acne vulgaris; (3) sycosis vulgaris; (4) lupus vulgaris; (5) tineas; (6) psoriasis; (7) acne rosacea; (8) eczema; (9) lupus erythematosus; (10) hyperidrosis; (11) hypertrichiosis; (12) alpœcia areata; (13) nævi; (14) Keloid.

From the dermatological side of the question, I have consulted English, French and American authorities. In all malignant degeneration and growths of the skin from the borderland ulcer of keratosis senilis to the ordinary forms of epithelioma the X-ray is hailed as chief.

Acne Vulgaris.—Two regard it as the best local treatment, while others regard it as a valuable measure to be used as a last resort.

Sycosis Vulgaris.—Only one regards it otherwise than an epilating agent. All caution against complete alopœcia resulting.

Lupus Vulgaris.—Here the X-ray receives universal praise.

Tineas.—Only to be regarded as an epilating agent, though the most thorough one possible.

Psoriasis.—The efficiency of the ray in getting rid of the eruption is admitted, but it is recommended to be confined to isolated grouping and those cases especially rebellious to other treatments. As this disease nearly always recurs, the X-ray must be used most carefully not to produce harm.

Acne Rosacea.—Only benefited when used as a local treatment.

Eczema.—Benefited when the case is chronic and there is much induration.

Lupus Erythematosus.—Very rebellious. The X-ray here is second to the Finsen light, but superior to other local treatments.

Hyperdrosis.—Benefited, but atrophic scarring the result.

Hypertrichiosis.—Can be permanently cured, but the danger of a treatment long enough to produce permanent and complete alopœcia balances its advantages.

Alopœcia Areata, Nævi, Keloid.—Results not satisfactory enough to commend it when compared with other recognized methods.

In the past year I have treated cases of nine out of the fourteen diseases mentioned. These treatments have not been in all the cases entirely limited to the X-ray, as my efforts have been to effect a cure and not obtain statistics.

In malignant degenerations and growths my success has been in line with other workers. Not only has the X-ray effected cures, but almost immediate relief from pain; the case allowed to be ambulatory and the ability to give any necessary after-treatment makes it an ideal method.

In three cases of sycosis vulgaris I have attempted to produce a permanent alopœcia because this was preferable to the recurring attacks. I do not believe the pus organisms were affected by the ray because the disease would invariably appear upon the return of the hair.

One case of tinea was permanently cured by one thorough epilation.

Of psoriasis I have treated four cases. These have all recurred. The scales rapidly diminish and fade, but the individual reaction is very hard to estimate. Overstimulation certainly does harm, and the proper amount of radiation is an unknown quantity. I have not found that the X-ray is better than other methods except to rid of the scales. This it does more quickly.

Lupus vulgaris in two cases has answered well to treatment, though subject to relapses in spots. These relapses have never involved the whole area, a cure finally resulting.

Six cases of acne vulgaris have done splendidly when the X-ray was used as part of a local treatment, especially in acne, involving the deeper layers of the skin and covering large areas. Mild stimulation has been sufficient in ordinary acne of the face, but in necrotic acne of the back I have produced erythema. The X-ray will not remove pus, however, and in all these cases it has been used only as a stimulant and atrophier of the sebaceous glands.

Two cases of acne rosacea have been benefited by a mild stimulation, but here, unquestionably, the main results were due to internal medicine.

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Two cases of lupus erythematosis have been greatly benefited, which is more than anything else had ever done, and one case of keloids was completely negative.

Two cases of eczema were benefited; both of these were chronic, much indurated, the patients taking internal treatment, while the X-ray was used as a local measure.

CONCLUSIONS.

The X-ray is a dangerous remedy, and should be used only by one who is familiar with its technique and only a definitely superior measure or a last resort.

In malignant degenerations, lupus vulgaris, lupus erythematosis it is a premier treatment.

In psoriasis it is a doubtful measure.

In sycosis vulgaris it is of great value when permanent alopecia is desired.

In the tineas it is more thorough than mechanical epilation, but not absolutely necessary.

In acne it is a valuable local treatment, but only one method of local treatment.

In hyperidrosis and hypertrichiosis it is a last resort.

In keloid and alopecia areata it is unqualifiedly inferior to other methods.

13 East Grace.

DISCUSSION

[*of Papers by Drs. Gray and Murrell.*]

Dr. James W. Hunter, *Norfolk:* I recently had under observation two cases of aneurysm, all the symptoms pointing to involvement of the trachea or esophagus by malignant disease. The radiograph picture made the condition quite plain.

In the diagnosis of tuberculosis by the X-ray we must not rely entirely upon the shadows in the plate, but must consider also the physical signs and examination of the sputum as well. With the possible exception of the tuberculin reaction, the X-ray is the most remarkable means we have of diagnosis of tuberculosis. The physical signs and symptoms are sometimes absolutely negative. A young man with tubercular family history when first seen had a temperature of 103, and his sputum was filled with bacilli, yet the physical signs were absolutely negative, except for an occasional friction sound. The radiograph showed a slight involvement under the left clavicle and of both bronchial glands. There is some difficulty in the interpretation of X-ray chest negatives. In addition to the plate shadows, consider the history of the case, the case himself, the microscopical and physical examinations.

In radiographing the patient should be placed upon his chest as well as upon his back, because what is nearest the plate will always show most distinctly.

Dr. Mark W. Peyser, *Richmond:* While the X-ray is a destructive agent, it is something more. Its action is just as that of any other light. Some years ago I compared the action of the X-ray with that of sunlight.

Dr. J. Garnett Nelson, *Richmond:* The respect with which the opinion of the physical diagnostician is treated should apply to that of the worker with the X-ray or fluoroscope. Except in gross and extensive lesions, the skiagraph is of value only on account of one's confidence in the X-ray man to interpret his picture. The tendency to rely upon the X-ray should not be so far cultivated as to cause us to neglect the development of some degree of skill in physical diagnosis. There are few pathological conditions within the thorax which should not be apparent to any physician who will develop to a sufficient degree the senses of sight, hearing and touch. Aneurysms or even slight dilatations of the aorta should be apparent. Very small pleuritic effusions, whether serum or pus, whether free or encapsulated, can be de-

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tected. There are men who claim to be able to mark out the boundaries of the lobes of the lungs in the healthy subject. Tumors, abscesses, perforations should be, of course, discoverable. I believe it is much easier, to some degree at least, to become expert in X-ray work than in physical diagnosis, but if the physical diagnosis man satisfies himself of the presence or absence of some pathological condition he should have tremendous confidence in the X-ray man to take his radiograph and then to interpret it before yielding the field to him.

The radiograph is practically useless with reference to cardiac conditions. Enlargements of the heart may show, but it is practically impossible to tell simply from the radiograph whether it is an enlargement, dilatation or an accumulation of fluid within the pericardium. The condition of the valves, unless there is some calcification, is not apparent. A man even reasonably skilled in physical diagnosis should discover the condition of the valves. He can determine the size of the cavity, the size of the heart, the state of the heart muscle and the functional activity of the muscle.

If we had to select in intra-thoracic work between the two, the X-ray man would be absolutely rejected. There are some pathological conditions discoverable by physical signs that the X-ray will show, consisting chiefly of scattered tubercular areas, but they are usually accompanied by infiltrations, etc., elsewhere, and are discoverable by other means.

DR. DOUGLAS VANDERHOOF, *Richmond:* Physical diagnosis is not an exact science. For that reason we should welcome any further means for diagnosticating conditions within the chest. The X-ray will be found of value only in doubtful cases and to confirm the findings of physical diagnosis. In my experience with the fluoroscope in the hospital wards the medical men were, in some cases, surprised to find that they had overlooked particularly small aneurysms and aneurysms of the arch of the aorta. Its chief value is in localizing small, encapsulated empyemata. They are often difficult to find as when between the lobes of the lungs. If the X-ray man can localize these the medical man will certainly be indebted to him. It was pointed out in Washington recently that in tuberculosis in children we should look more at the hilus of the lung than at the apex. One sign emphasized in recent years is the so-called ossification of the first rib, at the junction of the first rib and sternum. I believe that this has now been shown to be not a result of tuberculosis, but a predisposing cause. It has been pointed out in connection with the X-ray that this sign can be easily demonstrated.

A Vienna physician has recently pointed out that the X-ray frequently reveals: Infiltration process, confirmed at autopsy; cavities, deep-seated and superficial; shadows at different depths of the lungs, overlying one another; infiltrative processes can be defined.

Finally, and in the main, the X-ray merely confirms clinical findings, and is limited to differences in density of the lung.

DR. TRUMAN A. PARKER, *Richmond:* The physical diagnostician and the X-ray man should work hand in hand. The question is not which is the best way of diagnosticating conditions, but how can we best determine the condition as soon as possible, particularly with reference to aneurysm and tuberculosis. To make a diagnosis we have to take all the findings. We have to consider the bacteriological examination, the physical findings and the X-ray in doubtful cases. It is in the doubtful cases that we want every help that can be gotten. We must bear in mind the cases in which the sputum examination is negative, and the patient dies, and that quickly, of tuberculosis. Dr. Brown, of Saranac, reports a case in which sixteen weekly examinations of sputum were made, all resulting negatively. Upon the seventeenth examination the bacilli were found, and the patient died two weeks later.

Musser cites a case in which there was every indication of advanced pulmonary tuberculosis, several bacilli being found in the sputum. An X-ray examination showed a large aneurysm pressing upon a bronchus, causing dilatation, with accumulation of secretion, etc.

We must not forget tuberculin. The one criticism to be made is that it is apt to cause the reaction to anyone recently having had tuberculosis anywhere, and it is frequently necessary to determine the extent of the

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lesion, because a great many who give undoubtedly the reaction do not need treatment for tuberculosis.

DR. HUGH M. TAYLOR, *Richmond:* He who diagnoses well, cures well. Nine out of ten mistakes in practice come through mistakes in diagnosis. More mistakes are made from not seeing than from not knowing. Appreciating that fact, I have become more and more interested in the diagnostic powers of the X-ray. Revelations, which I would never have been able to make without its use, have given me more and more confidence in it.

The time for the use of the X-ray in fractures and dislocations is important. The right time is the first time you see the case. It helps in the diagnosis and in the prognosis. But do not let the X-ray man get hold of it later. It is valuable in many respects, but dangerous in other respects. It helps to obtain good results, but shows up bad results. It is invaluable in the diagnosis of bone and joint trouble and in visceroptosis; the time for its use is early.

DR. C. M. HAZEN, *Bon Air:* That some cases can only be diagnosticated by means of the X-ray is clearly proven. Perhaps early tuberculosis of the lungs is one of these. Certainly it is of value in a great many cases where you want confirmatory evidence. Again, in a great many cases in which you want negative evidence it is of value.

The whole range of the body is susceptible to search by the X-ray. I am not inclined to think that the ray men wish to make more of their work than is worth while. It is important that they should bring to the attention of the profession what they find in their work.

DR. W. H. WALLACE, *Brooklyn, N. Y.:* I strenuously object to the use of the word treatment by X-ray. That means nothing more than to say you treat a man with quinine in malaria. No two cases can be treated just alike. The dosage, variety of ray used, length of the exposure, all have to be varied. Some cases burn very readily. The same treatment in one case will give good results, and in another none. We have got to get down to something more definite than to say we are using the X-ray treatment. We ought to get some logical basis for dosage. Everybody can use the X-ray, but to get the same result is another thing.

For diagnosis in soft tissues the development of the plates is important. You may have the same length tube, the same exposure, the same quality of plate, and the plates won't be alike. There is more in the development of the plate than any other part of radiography. Overexposure and underdeveloping sometimes bring out more than the ordinary exposure and developing.

DR. A. L. GRAY, *Richmond:* I think Dr. Hunter has missed the point. What is the use of making an X-ray examination to determine tuberculosis if bacilli are found in the sputum? Or if you can determine it by physical signs, what is the use of the X-ray, except to determine how much involvement there is in advanced cases? What we want to do is to recognize the condition before there are bacilli or before the signs are so marked as for the average physical diagnostician to be able to recognize them. It is not my intention to discourage the cultivation of experts in physical diagnosis; it is in the cases they cannot possibly recognize that we can help them. We are not setting ourselves in opposition to the physical diagnostician, but merely to aid them in making an early diagnosis and finding out how much involvement there is, whether it is increasing or diminishing, and—one other very important point—whether a cavity is being walled off or not.

DR. THOMAS W. MURRELL, *Richmond* (concluding the discussion): I have done harm with the X-ray in psoriasis, not of injuring the patient, but in one case the eruption became a little more profuse, due to over-stimulation. In another case little good would be done by giving as little as was given in this case. You have got to be careful in estimating the dose. The individual reaction in all cases is very hard to determine. In the case referred to I used the coil machine, which is considered, perhaps, a better instrument than the static.

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FREQUENCY OF THE ABSENCE OF SKIN LESIONS IN SYPHILIS.

By EDWARD D. STARKE, M. D., Norfolk, Va.

From the earliest history of medicine syphilis has been recognized, and its course and symptoms described as now. Very little advancement has been made by investigators beyond the discovery of a specific for its cure. The early history of the disease is obscure, but ancient writers describe a condition undoubtedly syphilis, and before man had fully emerged from his primal state the "Black Plague" had its terrors.

The Egyptians suffered many times from outbreaks of syphilis, and the Jews were instructed and given laws by which the disease could be recognized and stamped out.

In 1494 we find the first accurate description of syphilis, and then the disease was regarded as a skin affection caused by impurity of the blood, and was believed to be incurable. In the last century we were first taught that syphilis is a constitutional disease, affecting different tissues. Various investigators have tried to ascribe syphilis to the operation of a bacillus, and two or three have been selected and abandoned. Lustgarten in 1884 describes one resembling the tubercle bacillus. Others have attempted to isolate the bacillus, but as yet cultures have not been successful, and it must be admitted that there is still much doubt on the subject.

We are now taught that syphilis is a highly contagious disease, due to inoculation by a specific virus, or by hereditary transmission. This virus must gain entrance to the blood through an abraded surface. After a period of incubation of from one to three weeks, usually twenty-one days, a characteristic sore—the "initial lesion"—appears at the point of inoculation. Next, after a period of from six to eight weeks a peculiar rash appears, to be followed later by sores involving the true skin, known as syphilides. It is this point, the appearance of the rash, that brings me to the subject of this discussion.

Syphilis can and does exist without skin manifestations in fully thirty per cent. of cases; and the reason the majority of physicians fail to make a correct diagnosis in obscure cases is because they have been taught to look for extensive glandular involvement and skin lesions, when the former may be unappreciable, and the latter entirely absent in a true case of syphilis.

Syphilis, like tuberculosis, has points of selection. Thus we may have syphilis of the lymphatic system, the primary channel of invasion, and secondary to this we have syphilis of the skin, of the mucous membranes, of the osseous system, of the nervous system, and even of the vascular system and the viscera—the point of selection being in proportion to the vulnerability of the tissues. The lymphatics, in an effort to throw off the toxic lymph, become diseased and inflamed, often suppurating. First in frequency we see the skin lesions; next to this the mucous membranes are affected; next the osseous tissue, first in the cancelous portion and later in the solid bony structures. These lesions usually come on late, during the gummatous stage, when the nervous system and viscera become affected. Syphilis may go unrecognized until late in the tertiary period, and the first evidence the physician sees may be a broken down nasal septum or gummatous brain. I have among my records a case of this description. About three years ago a man came to my office with a typical chancre. I did not tell him the nature of the sore at the time, but told him that I would see him from time to time and let him know its nature later. Under treatment the sore healed rapidly, and I took pains to watch the patient very carefully, but although I saw him nearly every day for over a year, there was never a sign of a rash or syphilides. Sixteen months from the time of infection, he came to me again with a very badly necrosed nasal septum, and an opening

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of considerable size from the nasal into the oral cavity. Not only this, but other extensive bone lesions indicated a very far advanced tertiary syphilis. Now, in this I had a case, suspicious from the first, and yet under most careful surveillance showed no skin lesions. The subject is a hard-working man, and I had every reason to believe that his statements that he had had no previous syphilitic history was true. Under anti-syphilitic treatment he improved, but was not entirely well when last seen.

Another case of interest was that of a youth of eighteen. He came to me with a suspicious sore, and on questioning him, I found that his only sexual companion had been a young woman who was at that time under my treatment for syphilis, and as the case occurred in a small country town, the chance of his getting the infection elsewhere was entirely precluded. I treated the sore and watched him carefully for skin lesions, but none appeared, although there was fairly marked glandular enlargement. In four months and eight days he returned to me with syphilitic tonsils and several mucous patches in the mouth. This responded to the mercurial treatment, and after a year's treatment I lost sight of him, but have heard since that he kept up the treatment and was cured.

In my experience among the negroes of this city and elsewhere I find many cases of long standing, who have never had any rash or syphilides, but do show most marked involvement of the nervous and osseous systems, and respond readily to anti-syphilitic treatment. I have seen many cases in females in whom the only sign of syphilis would be the general adenitis and venereal warts. One of my colleagues who has had extensive experience among these cases, has records of a number of similar cases.

I mention these cases as types to show that syphilis very often goes into the tertiary stage without showing any of the so-called secondary skin symptoms, and that the absence of syphilides is by no means conclusive evidence that the subject is not a syphilitic. A subject once seen with a typical chancre or even an atypical one should be watched for skin manifestations, but if they do not appear, give him to understand at least that he cannot be pronounced safe for some time. It is best not to begin treatment in any case until some decided symptoms of syphilis appear.

203 *Granby Street.*

HERPES GESTATIONIS—REPORT OF CASE.

By C. J. ANDREWS, M. D., Norfolk, Va.

The case which has called my attention to this subject was observed during the present year. From a study of the literature on this subject and conversations with practitioners of wide experience who have not seen a case, I conclude that it is of rather rare occurrence. However, that it may occur more frequently in a milder form, and thus does not receive the attention which this case required, seems not improbable.

Herpes gestationis is practically synonymous with dermatitis herpetiformis, the former name being used when it is associated with the parturient or puerperal state.

The condition is characterized by the most intense burning and itching, with a papular eruption of the skin. The following is a brief history of this case:

Mrs. A. B., age thirty-five, para 6. Heartburn and pruritus vulvæ have given considerable disturbance in all pregnancies, otherwise previous history is negative. At about six and a half months two small areas of eruption appeared on the face, one over the brow, and the other on the cheek—this eruption consisting of small closely aggregated papules. There was con

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siderable burning and itching, and the patient believed it to be rhus poisoning. This remained for several days and disappeared only to reappear on the lower limbs; here a much larger surface was involved, and the symptoms proportionately increased. These papules felt to the finger as small shot under the skin; some developed into vesicles with clear serum. After a few days the eruption reappeared on the face and neck, being accompanied by considerable engorgement of the superficial capillaries, giving the appearance of swelling, the skin being intensely red. Gradually the eruption extended to the skin of the abdomen, and, in fact, over nearly the whole cutaneous surface of the body. The burning and itching had become most distressing, and actually terrifying. The epidermis would be torn away in some places by the violent scratching.

Temperature normal; pulse, at first normal, had risen to about 100; urine extremely alkaline; no albumen, no sugar, sp. gr. 1026.

Many antipruritics were used. Carbolic lotion gave some temporary relief, but symptoms of absorption prevented its further use. Camphor chloral in ointment gave relief at first, but soon lost its effect. Chloral and bromide were without apparent effect, as was also morphine, a half grain given hypodermically. Finally, when the patient had been entirely without sleep or rest for several days, the symptoms increasing in severity, immediate delivery was advised, which advice was accepted, and the patient removed to the hospital, where, under ether anæsthesia, the cervix was dilated manually and the fœtus delivered by version.

When the patient recovered from the anæsthesia, the symptoms were considerably relieved. However, after about twenty-four hours, the symptoms again became severe, and continued so with the exception of slight remissions for about ten days, when improvement began. The symptoms gradually disappeared, until after two or three weeks the patient was practically well.

From the history of this condition we learn that attacks begin as early as the third month of pregnancy, but more frequently from the fifth to the seventh, and usually terminate only with delivery. Severe exacerbations not infrequently occur a few days after delivery.

With regard to the etiology of this condition authorities differ. Edgar states that it is a pure neurosis; many others express the same opinion, while some suggest that it may be of toxic origin. It seems reasonable to suppose that the unstable condition of the nervous system incident to pregnancy may be a predisposing cause.

Tete has found an akaloid in the urine which provoked an eruption on a guinea pig. Perin says that in herpes gestationis there is a diminution in the toxicity of the urine, and when a cure is effected, the toxicity rises again. Considering the known fact that the waste products of metabolism are so decidedly increased in pregnancy, I believe that when sufficient evidence has accumulated herpes gestationis will be classed as one among the results of toxemia pregnancy. It is to be remembered that it is only a comparatively short time since the vomiting of pregnancy and even eclampsia were regarded as pure neuroses. The objection may be raised that the same condition or dermatitis herpetiformis, as it is then called, occurs in other conditions than pregnancy. To this we can answer that toxemic vomiting and convulsions also occur in other conditions.

As to the symptomatology, the three principal features are as described by Crocker: First, herpetiform vesiculation; second, erythema; third, burning and itching. Bullæ have been observed in some cases. The case described above was of unusual severity. I do not find any case reported in which it was necessary to induce labor.

The indications for treatment are both constitutional and local. The treatment of the toxemia by eliminative and other means is of first importance. The local treatment is entirely palliative. Edgar says there are three things of use in the treatment of herpes gestationis—rest, arsenic and sulphur. I failed to get any effect from sulphur, and remembering its well known efficacy in parasitic skin diseases, I am inclined to believe that it has gained its reputation in this disease by being used in cases having parasitic elements. Fowler's solution was given in increasing doses, until eleven

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minims t. i. d. had been reached, when untoward symptoms of full medicinal dose appeared, and at the same time the symptoms of herpes began to improve. I, therefore, think this drug was probably of benefit. Wet applications of aluminum acetate and ice rubbed on the skin gave more relief than other local remedies. Ointments are contraindicated on account of the residue which irritates the skin and aggravates the trouble.

DISCUSSION.

DR. HERBERT OLD, *Norfolk, Va.:* The study of different manifestations that occur to women during pregnancy is much neglected. There are two clinical methods for determining what the trouble is. First, testing for indican in the urine, while the ordinary examination consists in looking for albumin and casts. Distinction between hepatic and renal insufficiency can only be made by testing for free ammonia in the urine. Though rather difficult for the ordinary practitioner, it can and should be accurately observed in the cities. About two months ago I saw a case in consultation that did not go to the extreme that Dr. Andrews' case went. It began at the second month of pregnancy. There were the ordinary erythematous wheals, with itching all over the body, especially around the mons. She also had an irritating vaginal discharge, which was not gonorrheal. The whole vagina became ulcerated. After the ulcers were cleaned and the vaginal discharge benefited, the itching, to a large extent, subsided, but the patient was very nervous, and the nervousness would take the form of this intolerable itching. Putting a nurse in control, she is so far getting along very nicely, and it looks as if nothing further will have to be done except to keep her quiet.

There is no class of cases in which the doctor is so poorly paid as in obstetrics, and the reason is that the ordinary layman has an idea that it is just a physiological process. They have some doubt as to whether the doctor is necessary at all, and certainly cannot see the necessity of notifying the doctor as soon as his wife becomes pregnant, and have her watched until the puerperium is completed. I think the doctors are largely to blame for that. When we find doctors perfectly willing to manage a case of obstetrics for ten, fifteen or twenty dollars, the people cannot have an idea that there is anything very difficult in an obstetrical case.

DR. CHARLES J. ANDREWS, *Norfolk* (concluding the discussion): After study of this case, I believe there are a great many cases, spoken of, no doubt, as pruritus vulvæ, and various manifestations of pregnancy that may be classed among this particular class of toxemia.

SOME POINTS IN MORBID PSYCHOLOGY.

By FREDERICK PETERSON, M. D., New York, N. Y.,

(Invited Guest.)
Professor of Psychiatry, Columbia University.

The practice of the general physician touches upon psychology at many points. He not only has, at times, to do with cases of insanity and epilepsy, but more frequently still he encounters hysteria and neurasthenia, tired-out nervous systems, eccentric personalities, nervous children who may later develop mental disease, as well as all the deliria associated with fevers, pneumonia, apoplexies, brain tumors, alcohol and drug habits and the like. In

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reality the general practitioner must come in contact with some mental abnormality, however small, in every sick patient with any kind of disease, even if it be only a mental depression, for which he often unconsciously prescribes hope with his pills or potions. Every physician is a psychotherapist, and it may be said quite truthfully that he is successful in direct ratio to the quality of his psychotherapy. He is obliged to treat both body and mind because of the psycho-physical parallelism that admits of no separation of the two.

With this preliminary outline of the many relations between morbid psychology and the work of the general practitioner, I am going to discuss only a few of these relations.

If there were time I should like to discuss with you the part played by morbid psychology in certain historical events and movements. You will recall the saying of the French alienist, Moreau de Tours, that all the great accomplishments of the world have been the work of madmen. Like many another aphorism, this has some truth as a basis. It is certainly true that many wonderful things have been done by individuals who were subject to what we call abnormal nervous and mental symptoms, such as visions, trances, fainting attacks and the like. Mahomet, who founded one of the great religions of the world, seems to have had visions, trances and hystero-epileptic seizures. Swedenborg, a practical scientific man, and one of high genius, who created a religion, counting among its devotees tens of thousands of the best people in all lands, saw visions and claimed to be able to see events occurring hundreds of miles away. Napoleon, who changed the political geography of Europe and made and unmade kings, had petit mal, and is said to have had hallucinations at times. Perhaps the most remarkable person in history is Joan of Arc. Picture to yourselves a simple peasant girl in a barbarous century, untrained, unable to read or write, who at the age of fifteen had already resolved, under the inspiration of her voices, to break the English power that had dominated France for more than one hundred years. At seventeen years of age she was made commander-in-chief of the armies of France, displayed astonishing military genius, overrode the generals who opposed her, planned her campaigns, selected with unerring instinct the best men for the most responsible positions, worked day and night over the endless details of organization and administration of the army, but always under the guidance and direction of her voices. She led her soldiers to victory after victory till she crowned Charles VII king of France, and destroyed the English power. She seemed to have foreknowledge of many events, of her own future, of her first wound, of her being made a prisoner at Compiegne, of her death. More remarkable than anything in her military career is the story of her conduct at the Rouen trials. After a brutal prison life in chains for nearly a year, she was brought before a jury of sixty picked intellectual men for cross-examination. For three months she sat before them, often six or seven hours a day, answering their questions. Every trap, every snare that cunning could devise, was laid for her, yet she was more than a match for them. Such answers to such questions are hardly to be accounted for on any theory acceptable to scientific men to-day. She was burned to death at the age of eighteen. Every fact in her wonderful history is a matter of documentary proof, of legal record.

There are other seers of visions and dreamers of dreams over whose names I should like to linger, but this of Joan of Arc is pre-eminently an example of the kind of mind under consideration. Such wonders baffle us. It is claimed by many that these illustrious beings who have exhibited what we physicians call morbid mental symptoms are different from ordinary individuals because they are inspired; that they are not abnormal, but rather supernormal. While it is safest for us as medical men to accept only such phenomena as true and actual as come within the range of natural manifestations, demonstrable by scientific method, yet we must keep in mind "the million acres of our ignorance," and never be too positive in our opinion of the unexplored and unknown regions of the mind. "There are more things in heaven and earth, Horatio, than are dreamed of in your philosophy." When, on the other hand, we examine the biographies of some of the

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supreme intellectual giants like Plato, Aristotle, Shakespeare, Newton, Goethe, Darwin, Spencer, we are not able to discover among these any such extraordinary phenomena.

What is insanity? I am not going to attempt to define it. Too many medical men have tried and failed to formulate a definition adequate from the medical and legal point of view. Let us rather say with the layman that insanity is a long dream. He said also that a dream is brief insanity. There is indeed a more than superficial resemblance between dreams and insanity, so close a relation in fact that many psychiatrists are now devoting themselves to a study of dreams as a part of their clinical and scientific work. There is in both a prominence of visual and auditory hallucinations, a tendency to the reproduction in memory of old experiences, the imaginary fulfilment of wishes and desires, baroque associations, chaotic flight of ideas, incoherence, weakened judgment, disorientation or loss of sense of time and space and divisions of personality. In fact, there is no phenomenon that presents itself in dreams which we may not observe among the insane of an asylum ward. Sometimes insanity first manifests itself in dreams, though the mind is still normal by day. In alcoholism dreams sometimes foreshadow the characteristic alcoholic delusions (of infidelity, etc.), and dreams may be the equivalents of epileptic seizures. Sometimes in patients just recovered from insanity who are normal by day there is a nightly recurrence of insane delirium in sleep, a species of nocturnal insanity. A terrible dream may usher in insanity, which then concerns itself with the material created by the dream. Dreams at times indicate the imperative ideas and impulses of neurasthenia. Thus in a way we may look upon insanity, in itself a pathological condition, as a summation of periodically recurring normal dreams, as a kind of reduction of consciousness, such as exists in the dream-state. Sanity is the sunlit day of full consciousness; insanity the moonlit night of the subconscious, full of mysterious and fantastics distortions of reality.

The examination of a patient with mental disorder is a much more complex process than that of a case of physical disease, for it is necessary in the former not only to ascertain the present physical condition, as with your ordinary patients, but also to investigate the mental state which involves the employment of unusual and new methods, and brings us into contact with a novel series of psychic phenomena; and moreover, to attain our end we need to study the whole past life of the patient, his disease, accidents, schooling, occupation, environment, temperament and character. Nor can we stop here, for it is of the greatest importance to inform ourselves as to conditions among his antecedents, to determine the type of family from which he sprang, and the presence or absence of a hereditary taint. There is therefore much to learn even before seeing the patient in person. The history of a case of insanity as now recorded in our New York State hospitals makes a rather formidable volume. It includes every kind of physical record made in general hospitals, as well as a thorough survey of the patient's life and ancestral conditions, and keen psychological analyses of his psychosis and its beginning and progress.

The question of heredity in nervous and mental disease is fortunately growing in public interest, and of late years I have frequently been consulted by persons desiring to marry as to the probable bearings of insanity or epilepsy in one of the families upon the proposed alliance. I am inclined to be lenient, though careful, in making decisions here, for a thorough study of the problem of heredity in relation to nervous and mental disease has yet to be made. Though epilepsy is the most strongly hereditary of all neuropsychoses, I have known epileptic parents to have normal children. Curious and remarkable as are the facts of heredity as we see them in connection with nervous and mental maladies, the heredity of normal organs and functions as shown in every reproduction of animal or plant life is more wonderful still when we come to look closely into it, and we must not lose sight of the fact that with every birth normal heredity presses down upon the newcomer with all the force of a hundred million years to make and keep him an average normal creature. We may cut off the tails or ears or horns of

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countless generations of our domestic animals, but these appendages continue to reassert themselves at every birth. Perhaps we need not think too seriously of the prospects of the human race if in our own country we contrast the 150,000 insane and 80,000 criminals with the 80,000,000 normal human beings.

But whatever optimism we may feel as to the progress and high destiny of the race that has triumphed over all obstacles, from the earthquakes, deluges, glacial periods, carnivorous monsters, warring tribes of ancient periods to the wars and plagues and famines of historic times, we, as physicians, must fight strenuously for the individuals who are perishing all around us from preventable disorders. The race will doubtless take care of itself. The percentage of insanity acquired through preventable causes like alcohol and syphilis is very large. In the State of New York there are about 30,000 insane in the public and private hospitals. Twenty per cent. of these owe their insanity to alcohol—6,000 persons. As each insane person represents an approximate loss to the State of $400 annually, New York loses, then, some $2,400,000 annually through the ravages of alcohol as regards insanity alone, without reference to pauperism and crime. As regards syphilis, some 5,000 patients have died from that metasyphilitic and fatal disease, general paresis, in the State hospitals of New York during the past nineteen years. And paresis, as you know, prefers the able man in the prime of his life and activities.

Now, to turn for a little to the classification of mental disorders. I will first call your attention to the following grouping, which seems to me at this time to answer best the needs of the general practitioner:

A CLASSIFICATION OF MENTAL DISORDERS FOR THE GENERAL PRACTITIONER.

TOXIC AND EXHAUSTIVE PSYCHOSES:

Puerperal	Alcohol
Lactational	Morphine
Renal Disease	Cocaine
Typhoid	Chloral, etc.
Pneumonia	

PSYCHOSES WITH NERVOUS DISEASES:

Polyneuritis	Epilepsy
Chorea	Hysteria

PSYCHOSES WITH ORGANIC BRAIN DISEASE:

Apoplexy	Trauma
Arterio-Sclerosis	Meningitis
Tumor	Isolation, tc.
Syphilis	

MANIC-DEPRESSIVE INSANITY:

Melancholia	Mania

DEMENTIA PRÆCOX:

Hebrephenic	Katatonic	Paranoid

General Paresis
Paranoia and Paranoid Conditions
Senile Psychoses
Constitutional Psychopathic States
Idiocy, Imbecility, and Feeblemindedness.

You know that the immense progress made in surgery and general medicine in the past thirty years is also reflected to a great extent by a marked progress in psychiatry. We have gained enormously from the clinical and therapeutic standpoint, and there has been advance in our knowledge of etiology and pathology. You will note in this classification some new terms, particularly manic-depressive insanity and dementia præcox. The mania and melancholia that you were formerly taught to recognize as sepa-

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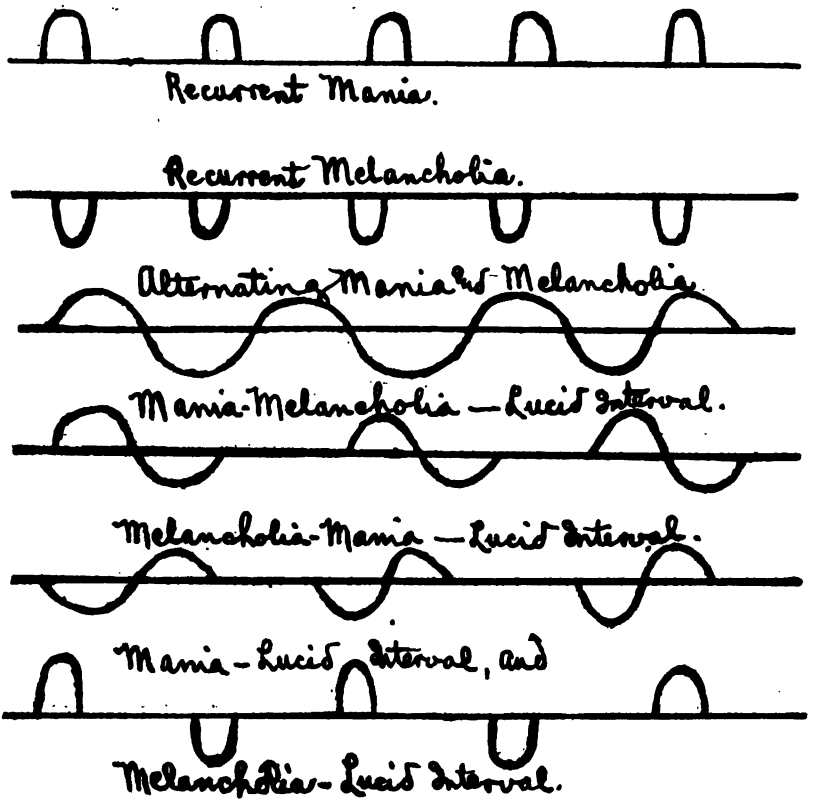

rate syndromes have now been brought together under the one term, for they seem to be only different phases of some one underlying pathological process. You will remember that the cardinal symptoms of the two disorders were as follows:

MANIA	
Exaltation	Motor Excitement.
Accelerated flow of thought	
MELANCHOLIA	
Depression	Retarded flow of thought
Depression	Motor Inhibition (stupor!

You will recall, too, that we had long known a singular disorder under the name of circular insanity or alternating insanity, which was characterized by alternations of mania and melancholia, sometimes with and sometimes without lucid intervals. To illustrate by curves, representing exaltation and depression above and below a normal emotional level, we were familiar with the following variations:

Now, it was found by a more thorough clinical study of our patients over long periods of years, including the past history before admission and the history subsequent to discharge from the asylums, that single attacks of mania or melancholia were among the greatest rarities, that recurrence of attacks is the rule, and that the circular or alternating type is far more common than we used to believe. But a still more interesting point brought

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out by this more careful investigation of the clinical symptoms is that there are many causes in which some of the antagonistic symptoms described above are combined in the same patient at the same time. Such cases are neither pure mania nor pure melancholia, but a mixture of the two. For instance, *exaltation* and *motor inhibition* are the symptoms in a type known as manic stupor. *Motor excitement, flight of ideas and depression* are the manifestations in the type called agitated depression. *Motor excitement, exaltation* and *retarded flow of thought* are the curious mixture in the type of insanity denominated unproductive mania. All these facts taken together seem an unanswerable argument in favor of the new designation, manic-depressive insanity. The prognosis as regards single attacks is good, but bad as to recurrence and complete cure.

The other term, dementia præcox, is perhaps not so successful a conception in nosology, and it is clearly unfortunate in its etymological make-up. But it is a phrase that has come to stay during our lifetime at least, and we must make the best of it. Dementia præcox is a kind of waste-basket into which we put many mental diseases that are not easily placed among such clear-cut syndromes as manic-depressive insanity, general paresis, the senile psychoses and paranoia. Into that waste-basket we have thrown all the psychoses of young people that we used to know as primary dementia, masturbational insanity, and insanity of adolescence; the cases of katatonia, which we formerly classed as melancholia with catalepsy; all old-time chronic maniacs with their delusions of being kings, queens, potentates, etc., and the chronic melancholiacs with their delusions of being followed and persecuted, together with most of the cases of puerperal insanity and insanity of the menopause.

It is of great practical importance that the general practitioner should be familiar with the symptoms of dementia præcox, because the prognosis is very bad. Very few cases recover. It is a dementing psychosis, i. e., a psychosis, in which the cardinal symptom is a progressive weakening of the mind. But it has a vast array of symptoms, and if I attempt to give a definition of the disorder you will understand why I say that it is not as clear-cut an entity as some of the other types of mental disease, like general paresis and paranoia, and why I intimate that it is not a permanent designation, but will ultimately give way to several other terms when we have learned more of the pathology of insanity. Here is the definition: Dementia præcox is a disease, beginning usually in early life, and characterized by a more or less marked and peculiar enfeeblement of mind, but manifesting upon this basis a considerable variety of symptoms, such as emotional indifference, weakness of judgment, flight of ideas, verbigeration, automatic obedience, catalepsy, echopraxis, stereotypy, negativism, mutism, impulsive actions, affectations, grimaces, unemotional laughter, delusions of depressed or grandiose nature and hallucinations.

Now, I feel that you are mystified and confused by such a catalogue of symptoms, in which there are introduced many terms that I am sure are somewhat new and unfamiliar to you. I question whether I ought to fatigue you by attempting to define them, but I must try to give you some sort of clinical picture of the disease by an analysis of the definition. First, then, it is a disease chiefly of early life. Sixty per cent. of the cases begin before the age of twenty-five years. Then I said "characterized by a marked and peculiar enfeeblement of the mind." It is not an equal weakening of all the mental faculties, but a selective deterioration. In the terminal stages the deterioration is general. But at first and sometimes for years we find the most noteworthy symptom to be *emotional enfeeblement*. Now, in mania there is emotional exaltation, in melancholia emotional depression, and in dementia præcox emotional failure. This emotional failure is shown in loss of interest, loss of power of attention and general indifference. With this there is also weakening of judgment. On the other hand the memory is unaffected, the perception of external impressions is unimpaired and orientation is undisturbed. No matter how dull and stupid he may appear, the patient notes what is going on, remembers well what happens, and knows where he is, and recognizes friends and relatives. There are many cases of

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dementia præcox which are for years undistinguishable from hysteria, and indeed there is a close resemblance between the two disorders. In both we are often able to discover by psych-analysis and word-associations the presence of some "emotional complex," some psychic shock or trauma, which has taken possession of the mind and determined all the morbid symptoms. Such an emotional complex may feed upon the functions of the soul as a cancer feeds upon the body.

To make a brief digression here, I spoke just now of word-associations, and I should like to say a word or two of this remarkable discovery of Jung, which may not be familiar to all of you, but which has become a potent means of investigating the workings of both the conscious and subconscious mind. Some of you may be familiar with the method through Munsterberg's presentation of it, without credit to Dr. Jung, in *McClure's Magazine* about a year ago. A word is spoken by the investigator, and the patient is expected to respond with another word as quickly as possible. The time between the two words may be measured with a one-fifth second stop-watch. A long reaction time indicates that the word has a particular emotional value. Using a series of such words is like fishing. Each word is bait on a hook thrown into the sea of the subconscious, and the species of fish that likes the bait best is caught and brought to the surface. The following is a good example of the way the method works:

Among a series of quite indifferent words given to a patient these four associations had so long a reaction time that it was certain that some emotional complex lay behind the reactions.

Water, deep	5 secs.
Ship, sink	3.4 secs.
Lake, water	4 secs.
Swim, can swim	3.8 secs.

All the other associations had reaction times, averaging about 1:5 seconds. Led by these clues to question the patient, it was discovered that he had recently attempted suicide by drowning. Water, lake, ship, swim, were words that struck that emotional complex.

Three types of dementia præcox are recognized—the hebephrenic, katatonic and paranoid. The hebephrenic type is a simple progressive enfeeblement of the mind such as we have just described. The katatonic form is distinguished by the presence, in addition of stupor or excitement, with negativism, stereotypy and suggestibility. Negativism is resistance to everything, to dressing, feeding, answering questions, to passive movements, and includes, of course, mutism. Stereotypy is the constant repetition of stereotyped words and phrases or of stereotyped movements, grimaces, etc. Suggestibility is automatic obedience. When you place the patient in any conceivable attitude he remains there. He is cataleptic and with that form known as flexibilitas cerea, or waxy flexibility. Whatever you say to him, question or command, he simply echoes exactly what you say (echolalia), or he may imitate what you do, your attitude or movements (echopraxis).

The paranoid type is characterized by a rapidly developing mental weakness and the presence of marked hallucinations of the senses and paranoid species of delusions.

Now, let me turn from dementia præcox, a further consideration of which, without clinical demonstration, can only be a tax to you, to a consideration of *paranoid delusions*. You have doubtless noticed in the classification I have given you the rather frequent term paranoid—paranoid dementia, præcox, paranoid conditions and paranoia. We classify delusions into paranoid, grandiose, depressed and hypochondriacal, with some subdivisions under these. But the paranoids are the most interesting. The mildest of these are the so-called derogatory ideas, which may concern the individual's physical, mental, sexual or legal relations. These are very common, and are found among psychopaths, feeble-minded, hysterics, epileptics and ordinary paranoiacs. Such patients believe themselves to be everywhere looked down upon, badly used, neglected, snubbed, displaced, unrecognized. A second and more important group of paranoid delusions is that of the so-called delusions of reference. The patient refers the words and looks of

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others, as well as speeches, gestures and newspaper articles, not at all intended for him, to himself. These delusions of reference are typical of beginning paranoia, of paranoid dementia præcox, and other paranoid conditions, such as acute alcoholism and drug psychoses and some epileptic states. The delusion of being watched or observed is akin to these delusions of reference. But the so-called persecutory ideas are the most important among the paranoid delusions. They are found in many forms of insanity at times, such as dementia præcox, acute and chronic alcoholism, senile dementia, general paresis and in epileptic and hysterical insanities, but they form the cardinal symptom of true paranoia. They are apt to be fleeting, transitory, unsystematized in all the other psychoses, but in true paranoia they are fixed, systematized and highly elaborated. Persecutory ideas include all sorts of delusions of being followed, conspired against, persecuted by electricity, the telephone and vapors, of being chloroformed, hypnotized, poisoned, incriminated, defrauded, attacked and ruined. The persecutory delusions of other psychoses are like a newspaper sketch, but those of paranoia are like a romance or three-volume novel. Paranoia is a progressive psychosis founded on a hereditary basis and characterized by an early hypochondriacal stage, followed by a stage of elaborated delusions of persecution which are later transformed into systematized delusions of grandeur. Hallucinations, especially of hearing, are often present, but the cardinal symptom is a fixed and elaborated delusional system.

Now, this psychosis has much interest for the general practitioner and indeed for everyone. To the rudimentary or undeveloped types of paranoia belong many queer and eccentric individuals whom we call "cranks" and whom the Italians call "mattoids." Under the paranoia we may rank many curious and interesting personalities, such as the litigationusts, pseudo-inventors, half-baked reformers, founders of strange and new religions, false prophets, and some of the religious healers often exploited by the newspapers. Many paranoiacs are distinguished in sacred and profane literature, the numerous false prophets or Mahdis of the desert, several of whom are described in Irving's life of Mahomet, Johanna Southcott, John of Leyden, John Thom of Canterbury, Guiteau, and possibly John Brown. Benvenuto Cellini, who immortalized himself in his autobiography, has been placed in this catalogue.

I cannot better illustrate this type of insanity than by submitting to you the autobiography of a paranoiac who was for years in the Poughkeepsie asylum, where I was stationed for several years. He was homicidal and also a man of unusual mental powers, as many such patients are. He was a good Latin and German scholar, and he learned Welsh from an attendant while in the asylum. This beautifully written manuscript of 400 pages is a remarkable dissection of his mind, as well as a most excellent description of the progressive elaboration of his psychosis. It also possesses great literary merit. He depicts perfectly the three periods of paranoia, that of hypochondriasis or subjective analysis, that of persecution or delusional explication, and that of grandeur or transformation of personality. He called the book "The Piling of Tophet" because of the sufferings he had to undergo. To show his own insight into his condition, which, by the way, is not infrequent in insanity, he says in his preface:

"This work is given to the public as a lunatic's defense of his position." And again in the introduction:

"I am not only a lunatic, but one of the class of lunatics having a controversy with the world in general; in other words, possessed with a monomania, or crazy, one-sizedly or on a single subject."

Monomania was the old designation of paranoia. The following extracts, taken here and there in the early chapters, describe the hypochondriacal or subjective analytic period very well.

"I was always a shy, retiring child, one of the sad and silent sort from the first." "I remember having at times impressions which must be identical with what I have lately heard others speak of as 'double memory.' The feeling would all at once creep over me that the very thing I was present with, my ideas and perceptions at that time had happened to me once before

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in just the same sequence and arrangement. I have heard this explained as due to a lack of simultaneity in the action of the two lobes of the brain, the tardy one remembering what had already passed through the other. My own theory was different. I only went so far as to look at it as a mistaken quality in the perception—an erroneous attaching of the nature of the act of remembering to what was really the act of thinking in the present.

"I was very early in life an observer of my own mental peculiarities to a degree which I think must be a very rare exception. If I could compound a boy of my own, I should try to improve on the model I remember to have exhibited in myself."

During adolescence he had a fever and says: "In that transitory strength given by the fever coursing through my veins I now saw the man I ought to have become rising up like a shadowy phantom in judgment on the wreck which I really was. I felt my deficiencies most keenly every time I met a human being face to face. I strongly disliked many things I noticed in the manner and words of some I met. I was terribly alert and sensitive to all kinds of snubs and sneers and oblique remarks in general."

"I was being carried into a state of secret enmity to mankind in general by the prevailing tenor of my brooding meditations. I was in such a towering state of morbid sensitiveness that a slight tinge of impertinence, brusqueness, a fancied contemptuousness in the manner of those I met, put me on the rack at once. Such was my mental state on the eve of my being overtaken by a more marvelously awful fate than ever fell to the lot of man. It became evident to me that I was hearing my own thoughts given expression to by foreign wills and voices."

"An English physician was the first to form a perfect communication with the inducted brain, and he had drawn off my entire memory back to childhood, and delivered it verbally in the presence of reporters who had taken it down. It was stated that the record was preserved in a number of thick volumes. After the whole earth had become permeated with the magnetism of my head, it would be felt as long as I lived, and the instant of my death would thus be signaled all over the globe, and would be noted and used by all nations as a new era from which to reckon time."

As the delusions burgeoned one from the other and grew more and more elaborate and systematized he wrote toward the close of his stay at the asylum: "The signs are too many and too evident to permit me to doubt that my destiny is bound up with the religion of the world."

The rest of the book is given up to psychological and religious discussion of great interest from our standpoint. He had gradually become a prophet and the expounder and propagator of a new religion.

Even from these brief extracts you are enabled to recognize the three stages or cycles of paranoia to see how the hypochondriacal self-analysis grew into a persecutory explication, and this into a transformation of personality. The extraordinary persecution leads by a logical process to the idea that he must be an extraordinary being. These extracts show also the wonderful elaboration of the delusional system, which is the diagnostic feature.

Aside from the four great types of real *acquired* insanity that I have referred to—manic-depressive insanity, dementia præcox, general paresis and paranoia—there is a group of *congenital* mental disorders with which the general practitioner is constantly brought into contact. I do not call attention simply to the cases of idiocy, imbecility and feeblemindedness with which you are bound to be familiar, but to a peculiar class just above the feebleminded, that we often call superior degenerates. This term comprises all those borderland cases that show from earliest childhood a deviation from the normal type; that present a disharmony or lack of equilibrium among their mental faculties. They are disequilibrates. To this group should be added doubtless the rudimentary paranoiacs already mentioned. But the class is far larger than this. These cases are found everywhere in our social organization. The disequilibration may show itself in unusual talents, associated with great weaknesses of one kind or another. We meet with it constantly in literature, art, politics and religion, and the disequilibrates help

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to fill our prisons, hospitals and asylums. The superior degenerates may be relegated to four groups, viz., constitutional depression, impulsive mental disorder, sexual psychopathy and congenital neurasthenia.

Patients with constitutional depression are born incurable pessimists. They have no joy in life, are full of vague apprehensions, hypochondriacal or derogatory ideas, toy with thoughts of suicide, are easily fatigued and exhausted, and at the same time are generally intellectual and even talented.

The impulsive class embraces all those cases who with intact intelligence, emotions and memory, become subject to imperative fears or phobias, imperative ideas, impulses to action. These force themselves upon the consciousness, despite every effort of the will to override or abate them. Such patients have what the French call "delirium with consciousness." Among the familiar types are agoraphobia, claustrophobia, the doubting folly, coprolalia, kleptomania, pyromania and the like. To the sexual psychopaths belong the various sexual perversions.

Constitutional or congenital neurasthenia is chiefly manifested in a marked exhaustibility of the nervous system. Throughout life the patient presents the varying symptoms of ordinary neurasthenia with strong egocentric and often hypochondriacal tendencies.

An important point to be borne in mind in reference to these disequilibrates is that so large a proportion are susceptible to alcohol, that very small quantities of alcohol are apt to produce marked toxic effects; and this leads me to another branch of our theme that is important to the general practitioner, viz., pathological drunkenness. It would be a little absurd to say that there is such a thing as *normal* drunkenness. Let us rather call it ordinary drunkenness. You are aware that ordinary intoxication is not considered in this country an excuse for crime. Crimes committed by intoxicated persons are expiated in the same way as crimes committed by sane criminals. But among the alcoholic phychoses, such as delirium tremens, acute hallucinosis, the Korsakoff or polyneuritic psychosis, chronic alcoholic insanity and alcoholic paranoia, we find the state of pathological drunkenness included in some of the continental countries. Very little, if anything, has been written about pathological drunkenness in this country, but abroad it has assumed a considerable forensic importance.

Now, pathological drunkenness is the type which is found among the superior degenerates just described, as well as among many feebleminded, imbecile, epileptic, hysteric, neurasthenic, paralytic and senile patients. It is characterized by peculiar blind motor explosions or impulses to action or by deep emotional depression simulating melancholia, or by strong maniacal outbursts. These conditions are of short duration, and are usually followed by deep sleep and more or less amnesia. These symptoms in themselves are diagnostic of the disorder, but additional diagnostic evidence is afforded by pupillary paralysis, and if necessary by subsequent experiment upon the patient as to alcoholic intolerance. That is, the effects of small quantities of disguised alcohol administered to the patient or prisoner, as the case may be, are carefully observed and noted.

I should like, before closing, to say a few words about the treatment of insanity in general. Of course, prophylaxis is a phase that should be constantly before us. The general practitioner has a rare opportunity to spread about him the many facts that bear on this. He can do much to educate the public in regard to the evils of alcohol and the diffusion of syphilis. He is early brought into close relations with degenerate stocks, and may direct the bringing up of nervous children, lay out for them a map of life, that should comprise the most careful physical rather than mental education and development. He should interest himself not only in prophylaxis, but in the care of patients with insanity before their admission to hospitals, in the conditions of the hospitals and the methods of treatment carried on there, and in the after-care of the convalescent and recovered insane.

Owing partly to the prison-like plan on which the older asylums were built, and partly to the complicated judicial procedures necessary for the commitment of patients, there still exists among the people an ancient legacy of feeling about an asylum, and they pass it as they do a prison or a ceme-

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tery, with dread and mistrust. Out of this they must be educated. Though we exchanged the word asylum for the word hospital, we have not yet succeeded in instilling into the minds of the public that the insane are sick. They must learn that insanity is an illness, a preventable and curable one. When this is once learned they will never again permit the acutely insane to be taken to jails and stationhouses, as they are at the present time frequently all over the United States, pending commitment to a hospital for the insane. They will provide psychopathic hospitals in all our larger cities or pavilions in connection with general hospitals (as at Bellevue Hospital in New York, Kings County Hospital, Brooklyn and the General Hospital in Albany and the newly-planned psychopathic department of Johns Hopkins Hospital), to which all emergency cases of insanity can be taken for observation and treatment before transfer to hospitals for the insane. The period of detention in such general hospitals or psychopathic hospitals should be at least ten days, instead of five days, and without any magistrate's or judge's order whatever. This is a purely medical, and not a legal matter. It is a question for a board of health, not the courts, to regulate. It should fall altogether under the rules of quarantine. An insane persons is sick, and is a menace to himself and the public while thus sick. If we can restrain a person of his liberty without commitment papers when he has diphtheria and other contagious or infectious diseases, why have recourse to a judicial proceeding in emergency cases of insanity? If physicians unite in demanding the recognition of insanity as a disease this point will be gained. Of course, for longer stays in hospitals and retreats for the insane a regular form of commitment is necessary for the protection of the sane. But chartered general hospitals should be permitted to receive and treat cases of insanity for whatever length of time is expedient, and all hospitals and retreats for the insane should be permitted to receive, on the recommendation of any physician or relative, emergency cases of insanity for a ten-day period for observation and treatment pending commitment.

The cardinal principles of the treatment of insanity are isolation and psychotherapy. Patients may be isolated in their own homes in acute conditions, but acute cases requiring bed treatment are relatively few. The vast majority of cases of insanity are rather sub-acute, insidious, chronic in their onset. For these isolation means removal from home and family surroundings, either to hospitals and retreats, or, if better for the patient, to suitable sanatoria, resorts, hotels, rest-houses, country homes, etc. Sometimes travel and change of scene are advisable. Under the heading psychotherapy are included, not only the influence of sane companionship and conversation with physicians and nurses, but all sorts of exercises and occupations. It is an axiom with the psychiatrist that nothing is better in the way of treatment for the disordered mind than physical employment, which improves nutrition, acts as a safety valve for the escape of surplus energy, distracts the attention and engages the interest of the patient. While recreations and occupations for patients have been multiplied and improved upon to a great degree in the public hospitals, this is still a form of psychotherapy that is far from sufficiently developed. It is probably the most important form of therapy for the vast majority of the patients, yet it plays a very small part after all in hospital regime. Each hospital should have several employees whose sole duty should consist in keeping patients occupied in various recreative exercises, industries and handicrafts. The exercise and occupation cure nowadays, so extensively applied to various neurosis both here and abroad, as at the Craig Colony, at Dr. Hall's place at Marblehead, Mass., and as Dr. Sharp's, at Katonah, New York, should be carried out quite as elaborately, and really with more reason, at every hospital for the insane. Unfortunately, this is little done. It is better done in the public than in private asylums, but even here it is inadequate. The habit of keeping only a boarding-house for the insane is a hard one to break. The doctors in charge of private retreats are not wholly responsible, for the fact that they do so little for their patients beyond feeding, housing and guarding them. It is partly due to long-established custom, partly to therapeutic pessimism and partly to the stand taken by the patient's relatives who are not

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educated to the occupation idea. When you next visit an asylum, public or private, you will be able to judge of the progressiveness of the institution by inquiring into the kind of medical histories taken, by looking in at the laboratory, and, above all, by observing what the patients themselves are doing.

In closing, I should like to recommend to such of you as have not already read it a book recently published by MacMillans called "A Mind that Found Itself," by Clifford W. Beers, a young man who for three years was an inmate of both public and private hospitals for the insane in Connecticut. He gives a very clear, convincing and withal temperate description of some of the defects in many of our institutions for the insane, defects that are, it may be stated, chiefly due to legislative parsimony in regard to public institutions, and not to the medical officials who are in general a high-minded and noble class of men working toward good ends, however, hampered by the stupidity, ignorance and false economy of politicians. Furthermore, in his remarkable book, Mr. Beers points out the remedies for these defects.

DISCUSSION.

DR. J. ALLISON HODGES, *Richmond:* If we remembered that, in addition to the inherited constitution, there are certain neuroses or certain psychoses often present, and which we are apt to call individual temperaments, we might be better guidded in the management of some of these cases. I believe the subject of psychology in the future is going to demand more attention than we could possibly think of at the present time. I do not believe I am radical when I am bold enough to say that possibly within ten or fifteen years there will be a psychologist attached to some of the schools of our cities, who will pass upon the further advancement of the students or will direct certain pupils along certain lines to get better results in the future. It is a very practical thing. To-day we have physicians to examine students' eyes, authorities to look after contagions, and infections, and I make bold to say that within ten or fifteen years we will have an even more important man than the one who fills those positions to-day. Is not the brain and its future the most important thing that could be controlled in student life and guided for the best advantage for the future? Furthermore, defectives would be kept out of certain advanced classes to the betterment of his individual health. The backward children along certain lines would be discovered in time to be directed or deterred as the future health would dictate. You will agree with me that psychology applied to the practice of medicine along that one line would be of great benefit to the future of the race. I believe that more and more attention will be paid to applied psychology in the future. Remember how interested our medical colleges are to-day in the proper study of pathology. How long, then, can they fail to be interested in the proper study of psychology? And though I have not looked into the statistics, I doubt if there are more than two or three institutions in the country which are properly teaching applied psychology in the study of medicine.

In the name of this Society, I believe I am warranted in complimenting Dr. Peterson on being the first to present this subject in this manner.

INEBRIATES AND WHAT TO DO WITH THEM.

By J. S. DEJARNETTE, M. D., Staunton, Va.

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An inebriate is one who is habitually addicted to the excessive use of alcoholic drinks, morphine, cocaine or other agents, causing exhilaration and

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stupefaction, and whose mind is altered or impaired from the direct effects of his drink or drug.

There is a wide range of variation in this definition, as it includes the man who keeps himself gentlemanly merry and all intermediate stages down to the ordinary sot.

The drunkard usually commences to drink voluntarily, but after accustoming himself to the use of liquor he finds he cannot abstain from it without great mental and physical suffering. It is said the will power required to keep this class from drinking would enable one to hold his hand in the fire. Therefore, it usually requires the assistance of others to help him to "cut it out," as he expresses it. The drug fiend is in the same relative position to his drug as the drunkard is to his dram, with the exception that the above symptoms are intensified. Both classes are occasionally unable to attend to business after the continuance of the habit for a long time without their accustomed stimulant, and are, therefore, forced to continue its use, and are literally "damned if they do" and "damned if they don't."

Classification.—In a partial classification we have enomania, or wine madness; narcomania, or stupor madness; polydipsia, or much thirst; dipsomania, or thirst madness; mania-a-potu, or delirium tremens; Karssakow's psychosis, or disorientation, pseudo-reminiscence and loss of memory for recent events, etc., alcoholic hallucinosis, alcoholic dementia, alcoholic pseudo-paresis, morphomania or morphinism, cocainism, etc.

Responsibility.—The voluntary drunkard is held by the laws of the land as responsible for his acts as if he were sober. This to the casual observer appears harsh, and in some instances it is; for one in this condition is liable to do and say what he would not do and say if his brain were not poisoned. More murders are committed from the effects of alcohol than from any other cause, epilepsy ranking next.

Fourteen per cent. of epileptics are caused from alcohol. Therefore, alcohol is the indirect cause of the murders committed by 14% of the epileptics.

Sachs, of Germany, says: "Fully 50% of all crimes are committed under the influence of alcohol." In England and America the per cent. no doubt is equally as high.

The reason of the law is that every one is responsible who voluntarily puts himself in a condition to lose self-control, it being against public policy not to do so; for if drunkenness would excuse crime everyone contemplating crime would get drunk, or partially so, and plead his condition as an excuse. Furthermore, the Holy Law holds "no drunkard shall enter the kingdom of heaven." If he were not responsible, he could not be justly excluded on account of his habit.

Remote Effects.—The picture of the drunkard is very common to all of you gentlemen, but the remoter effects are not nearly so apparent. On a closer study we find gastritis, cirhosis of the liver, apoplexy, nephritis, arterio-sclerosis, paresis, epilepsy, dementia, delirium tremens, Korssakaw's psychosis, multiple neuritis, lepto-meningitis, pachy-meningitis, etc. Pathological changes found are in the first and fifth layers of the cells of the cerebral cortex, caused by excessive production of neuroglia. The cerebrum loses weight and the ventricles are dilated, but the chief cerebral change is endarteritis, mostly in the small terminal arterioles of the cortex. Also minute aneurismal dilatations. The cortical-neurons present a gradual sclerosis called the chronic change of Nissl.

And further, we find the curse not confined to the inebriate alone, but handed down to his offspring in the form of epilepsy, idiocy, imbecility and a tendency to drunkenness and insanity itself.

Treatment.—In the treatment of these cases I believe in hot baths at a temperature of 105 degrees to 110 degrees, lasting for half an hour at a time, and given from two to four times daily. Internally, I give strychnine three times daily, from a thirtieth to sixtieth of a grain, with abundance of milk, soups, eggs, etc., and the patient is encouraged to drink as much water as possible. This treatment has given me perfect satisfaction, and the immediate effects of the liquor or drug usually pass off in from one to three days.

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The "Keely Cure," "Hypnotic Suggestion," etc., are said to do good, but the inebriate is prone to relapse, whatever his treatment may be. Except in an unusually weakened condition, I immediately withdraw all whiskey, and in the case of drug habitues, all drugs. I do this in nine out of ten cases. Patients who have had the gradual reduction treatment tell me they suffer much less under the rapid method.

In morphine cases, after immediate withdrawal, considerable diarrhœa and vomiting often follow, while in cocaine fiends I have never seen any bad abstinence symptoms. The habitues of morphine and cocaine come to us often with extreme emaciation, and under the above treatment they frequently gain one-half a pound a day after the abstinence symptoms have subsided.

Of course, this treatment cannot be carried out unless the patient is under control, preferably in some hospital or sanitarium.

Most of these cases continue their downward course until their substance is exhausted, their credit lost, their families disgraced, and they land mental and physical wrecks on the wards of some hospital for the insane, where no sooner are they built up than they begin to threaten law suits on the hospital for detaining them, and are usually discharged after a few weeks or months treatment.

We all know their reformations last only until the first temptation arises, and, like poor old Rip Van Winkle, they continue to swear off after each drunk, and usually begin again by taking the "drink that does not count." To save the victim from himself, his wife from poverty and misery, his unborn children from transmitted mental and physical weakness, I believe we should establish an inebriate home, controlled and supported by the State. Laws should be made so that the inebriate can be arrested and confined in this home. The fact whether the party is or is not an inebriate may be determined by a commission composed of a magistrate, his family physician and a neighboring reputable citizen. The commitment to the home should be for six months the first time and one year for all subsequent commitments. If he elope, six months should be added to his term. He should be made to do a reasonable amount of labor, and in this way the institution would be almost self-supporting. At the same time the hospitals for the insane would be relieved of a very disagreeable class of patients.

Whiskey is credited with being the cause of from 20 to 50% of insanity, and as there are about 3,500 insane in the State, whiskey must answer for 700. Fourteen per cent. of epileptics are said to be caused by alcohol, and as there is one epileptic to every 500 citizens in the State, we have 404 epileptics caused by alcohol. If these statistics be true, by controling alcohol alone we would be able to diminish our insane 700 and our epileptics 404, making a total of 1,104. To remove the cause is the only reasonable way to fight disease, and prevention is far better than cure. This can be done, especially in hereditary diseases, by preventing the marriage relation between the unfit, such as those who have dipsomania, insanity, epilepsy, mental weakness, syphilis, tuberculosis, and inebriacy, except in cases where the woman is over 45 years of age. This would perpetuate the race from healthy stock, and eliminate to a great extent the weaklings. Some writers advocate sterilization of this class, but at present this sounds extreme. However, in the course of time, I believe some such measures as above mentioned will be resorted to, or the manufacture and sale of these agents be properly controlled or prohibited.

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THE MEDICAL SIDE OF THE ALCOHOLIC PROBLEM.

By T. D. CROTHERS, M. D., Hartford, Conn.

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Every advance of scientific medicine, along etiological and clinical lines, brings into increasing prominence the influence of alcohol as a cause of disease. The necessity of recognizing this in the questions of diagnosis, prognosis and the various health problems which occur in everyday life is all important.

No matter what the opinions or theories of the physician may be, the degenerations from alcohol must be recognized in the study and practice of medicine.

In private practice the symptoms of fever and local inflammations and localized pains, are very often traceable to alcohol, which, when removed, are followed by recovery.

In the treatment of typhoid fever, pneumonia, and malaria, the fact that the patient has used spirits either in so-called moderation or excess is a very important one in the treatment.

The mortality of these and other diseases is very much larger, and the complications more positive when it occurs among drinking men, than in total abstainers.

In hospital practice, the previous habits of the patient are very important factors in the treatment, and must be recognized in the diagnosis and prognosis; also the occulist, the aurist, the throat and nose specialist, and the physician who treats mental and nervous cases, inquire with great minuteness as to how much alcohol has been used by the patient. The same facts are sought for and studied by the obstetrician and the student of children's diseases.

A noted specialist said that it was of equal importance to know the habits of the parents in a study of the diseases of children. If the parents were drinking people, the treatment of the disease of the child was a matter of greater uncertainty, and more difficult.

In surgery the treatment of injuries, dislocations, fractures and sprains will vary widely in persons who use spirits, from those who are abstainers. Wounds and injuries are more easily infected and heal more slowly, and are followed by greater depression, lower vitality and longer convalescence in drinking persons.

Blows on the head and concussions are followed in the alcoholic by a greater variety of symptoms which are more serious in proportion to the injuries received.

The mortality from operations in the inebriate is larger than in temperate men, and in railroad surgery this fact is always prominent and considered. Modern surgical works suggest a guarded prognosis, where alcohol has been used by the patient.

This is based on the fact that the alcoholic has lowered vitality, greater metabolic derangements and feebler power of repair. Comparisons of the mortality of diseases, both medical and surgical, bring this out very clearly.

Recently several authors have asserted that a large proportion of the so-called rheumatic cases are neuritis with an alcoholic origin, and that no case should be treated without first eliminating the possibility of alcohol as a etiological factor.

One author considers proprietary medicines containing large quantities of spirits, and tinctures given in large doses as sources of complex and obscure diseases, which should be investigated and traced to the real cause—alcohol.

Experience shows that many of the vague and complex symptoms of disease disappear by the removal of alcohol, whether taken in excess or

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so-called moderation. These are some of the facts which everyday observation confirms, fully sustaining the assertion of many eminent authors, that alcohol is a cause of disease, equal in magnitude to that of syphilis, and should be considered in the diagnosis and prognosis.

Recent studies of vital statistics show that alcohol, as a cause of disease is very rarely mentioned, probably because of the theory that it implies a moral disorder and reflects on the character of the deceased.

In reality, where accurate information is sought, it is found that over 50% of deaths from pneumonia and Bright's disease occur in alcoholics.

Cirrhosis of the liver, cerebral hemorrhage and a number of diseases of the circulatory and nutrient organs occur most frequently in persons of this class.

Studies of Life Insurance statistics bring out this fact, and there is a continual struggle to escape responsibility for deaths which are so obviously the direct result of alcohol.

Most companies refuse to take insurance on persons who use spirits, except at high rates, realizing that the duration of life is diminished by the use of alcohol, and many companies refuse even high rates on a drinking man.

The medical side of the alcoholic problem becomes still more prominent in the statistical studies of insanity and mental diseases. The most reliable authorities indicate that from 15 to 40% of insanity is the direct result of alcohol.

In pauperism and idiocy fully 50% are traceable to the degenerations due to spirit drinking. In epilepsy 30% is asserted to be the lowest figures of the number of cases due directly to alcohol.

These are the estimates which all reliable authorities agree upon. In criminality a still more startling record is seen in the fact that of the 149,000 persons confined in prisons in this country 55% committed their crimes while under the influence of spirits.

The statement is made that over one-half a million persons are arrested in this country and Canada for petty crimes and violations of the laws and fully 90% of them are alcoholics. Equally startling is the statistical study of railroads, automobiles and steamboat accidents, which indicates that over 50% of these disasters were due to the mistakes of persons who were using spirits at the time, or immediately preceding the accident.

These studies are not theories or opinions, but facts, which bring out prominently the influence of alcohol as an active cause in disease and the perils of modern civilization.

The studies of pauperism, its causes, and the diseases which follow from the neglect of hygienic living, show that alcohol is both an active and a predisposing cause, to an extent practically unknown, or at least beyond any present estimation of its influence.

The medical and physical side of the alcoholic problem is demonstrated by these facts beyond all question, and the presence of great armies of alcoholic degenerates in police courts, jails, almshouses, hospitals, insane asylums and the slums of the cities is the most impressive evidence of the physical degeneration and disease which flows from this source.

The failure to interpret rightly these facts and to recognize the physical character of these cases in the early stages, reveals one of the most startling delusions of civilization. To consider all such persons sane, sound and responsible, until they reach the incurable, terminal stages, and even to act upon the theory, that they are, and that their defects are purely moral is stupidity without a parallel.

In the business world all theories become significant, compared with the fact that the alcoholic, and even the moderate drinker, is enfeebled, irresponsible, and unable to act with discretion and judgment.

All positions of responsibility, where the faults of human judgment must be reduced to a minimum, are offered preferably to abstainers. The so-called moderate user of spirits is rejected as incapable and unable to act intelligently in a crisis.

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All large corporations, such as railroad companies and steamboat lines, insist with increasing inflexibility that only total abstainers shall be employed. Bitter experience, which is growing every day, makes more and more prominent the fact that the user of alcohol in any form is incapacitated, degenerate and diseased.

The discharging of men in the late financial depression is a recent illustration of this fact. Drinking men of all degrees were laid off on the plea of "hard times" simply because being of less value their services could be more easily dispensed with than with those of abstaining employees.

This is another most significant recognition of the physical side of the alcoholic problem. For over half a century there has been an increasing agitation in the public mind concerning the evils of alcohol and the best methods of removing them.

Innumerable societies and reform movements have come into prominence and have been growing steadily along different lines, and recently a startling change in public sentiment has taken place and laws are being enacted in State after State prohibiting the sale of spirits; and a movement that is not clearly traceable to the temperance reformers is spreading over all the country, demanding the restriction of the sale of spirits as a beverage, and condemning its use in every way.

This is due to a great cosmic consciousness of danger and a recognition of the need of some positive physical means that will control and stamp out what has clearly become an evil of the greatest magnitude.

It is not the recognition of the ethical or moral side of the subject. It is a dim consciousness that the use of alcohol and the attendant evils like the plagues and scourges of the past, have a physical origin and are the result of conditions which can be known and prevented.

A great political party is appealing for votes with one special object of controlling this evil, and the agitation is becoming more and more intense and personal, affecting widespread interests in every community.

Most legislatures are passing laws which in some way will control or help to neutralize the evils which gather about this menace to civilization.

Courts are fining and sentencing poor victims to jail with the same purpose, and the business world is everywhere realizing the losses and suffering which spring directly and indirectly from this source, and is turning to political parties, societies and church authorities for help.

In all this great movement how absurdly pathetic is the stupidity of the physician who is indifferent and takes no part in the matter that is so thoroughly scientific, medical and hygienic.

He goes on giving relief in the extreme stages of disease without the slightest effort to point out its source and the laws of its origin and development. In most cases he joins with the theorist and laymen in the idea that the alcoholic evil is a vice and a mere lapse of will-power. The physician of all others is the natural student of the phenomena of alcohol and its degenerations.

He should instruct the public, and not be taught by them. Thirty-eight years ago a society of medical men was formed in New York City to bring this subject before the medical world. Its one object was to show that alcohol is a poison, that its use is always a mistake and that the conditions which follow are those of disease that can be cured and prevented.

This society still exists, and its efforts to bring the alcoholic problem into the field of medical study has been slowly and steadily increasing. Its organ, *The Journal of Inebriety*, has for over thirty years been publishing the evidence from clinical and laboratory researches showing that the only solution and means of prevention must come from a medical study of the facts and conditions, which can be gathered in every community of the country.

The work of this society for the study of inebriety has been supplemented by similar work of an English society, organized a few years ago. It has been proven beyond all question that the theories that alcohol

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has stimulant and tonic properties are errors, and that its real effects are narcotic and paralyzant.

The severe criticisms which the new views have encountered have only served to make them more prominent, and the old theories in the text-books and the ideas that vice and moral weakness are the explanation of drinking habits are rapidly losing ground; and although still heard in some circles that grow more and more untenable with every advance of exact science.

The medical study of inebriety shows that it is produced by distinct causes which are both inherited and acquired, and is associated with exhaustion, cell starvation and poisoning, and that, given certain conditions in certain surroundings, inebriety may be predicted with absolute certainty.

Thus, neglect of hygienic living, bad nutrition, bad training, underwork and overwork, living in clubs and saloons, are certain to explode a train of causes which develop the neurosis of inebriety and alcoholism.

In a similar way certain germs in the water and milk which we drink will develop typhoid fever in a large majority of cases. In both cases there are specific causes that develop in favorable soil and produce exact results.

Thus epidemics of typhoid fever are traceable to germ causes which have had an origin, growth and development. The inebriate has grown from equally definite physical conditions acting along lines of uniform laws.

Tuberculosis is one of the great vital questions of the day. The recent congress at Washington discussing the causes and means of treatment made no reference to moral forces or questions of will-power. It was simply a matter of germ causes, their origin, growth and prevention. The disease of inebriety and alcoholism is of great magnitude, infecting every condition of life, with more serious consequences than tuberculosis, and yet the physical causes are practically ignored, and an army of laymen are trying to prevent it as a moral evil.

Every advance in sanitary and mental science brings into prominence the physical causes of this disease, and with it amazement and wonder that the medical profession have not been students of this subject.

There is something startlingly absurd in the difference and critical sneers of the medical profession concerning the extreme theories of reformers in their efforts to control the evils of alcohol. Instead of taking up the subject themselves and becoming teachers and leaders, they are like miserable camp followers shouting to the men on the front how to conduct the battle.

Medical men, by their constant observation of the facts and phenomena of the physical laws and psychological forces which develop or destroy life, are best fitted to make the alcohol problem a study. Of all others they come into closest contact with the physical and psychical causes which develop into inebriety and alcoholism.

The psychosis and neurosis of inebriety is emphatically a medical study as much so as infectious diseases; and yet from want of study and the prevalence of false theories the subject is left to laymen and reformers, who recognize the danger and with a zeal and energy which scientific men should emulate, they struggle to overcome and prevent its influence.

What a reflection it is on the scientific training of medical men to have societies formed and great church movements organized to study and understand the means of prevention of a sanitary evil when the physicians, of all others, should be the first to indicate methods of relief!

A parallel to this would be crusade movements of laymen and clergymen and reformers, holding revival meetings and warning the public how to avoid typhoid fever, tuberculosis, diphtheria and other diseases and pointing out the moral causes and the means to overcome them.

The great sanitary subjects of fevers and tuberculosis are recognized, and medical men are considered as proper teachers and students, while the equally great subject of alcoholism is neglected; yet all unconsciously every advance is a call to the physician and an appeal to his intelligence and

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public spirit for help in a problem, the solution of which must at last come from the physician.

The medical side of the alcoholic problem has a very intense personal interest to each one of us. There is no community or neighborhood in which poor victims are not seen. Not unfrequently they develop in our own firesides and among our best friends and associates, and when they reach extreme stages appeal to us for help.

In the beginning, when we could have helped them, the miserable theory of vice and feeble will-power obscured all efforts along rational lines with terrible results. Later when the conditions become urgent and the physical state is unquestioned, then the family physician consents to send him to some gold cure with quack methods.

Then comes a period of exalted delusions of cure, followed by hopeless despair at the failure, and finally the insane asylum and death ends the tragedy. Thoughtful physicians in every community note such cases, and with them feel regret that they could not have done something more than give advice and placebos, and that they did not understand more of the mysterious neurosis and psychosis which destroyed the victim.

It is this strange failure to recognize the physical phenomena of this disorder that has made it possible for quacks with gold and other unknown remedies to do what every trained physician should and could do, with far more accurate results.

It is still more startling for physicians to consent to these quack methods of cure or acquiesce in the theories of societies and churches that moral means are the only prevention, and thus practically deny the medical side of the subject.

A patient appealing to the physician with a high temperature, cough and decreasing weight, attracts attention at once and receives medical treatment, but if he comes with an alcoholic breath, deranged circulation, a history of a recent toxic attack and other physical signs, moral advice, the Keeley treatment and placebos are often all that is offered.

Many physicians are both directly and indirectly injured by the prevalent theories of the harmlessness of alcohol and its value as a food and stimulant, which are contradicted by experience and observation, and such theories actually increase the difficulty of treating successfully such cases with hope of success.

It is such theories that diminish the ability of patients to pay the legitimate fees of physicians and increase taxation and loss in the community. Some one blunders and the chronic, paretic, demented and delusional inebriate is the result.

Long periods of suffering, loss, disaster, disease, degenerations and crime all could and should be prevented. When the physical condition of inebriety is recognized at the beginning, it can be stamped out as positively as yellow fever is prevented by destroying mosquitoes.

The Anti-Alcoholic Congress at Stockholm in 1907, with its fifteen hundren delegates and official representatives from nineteen civilized countries of the world, was unmistakable evidence that a change had taken place and that the medical side of the alcoholic problem is rapidly being recognized by the leaders in the medical world.

Every public health bureau and association in this country and every great sanitary movement to prevent disease and remove its causes indicate that the alcoholic problem is a physical one, not to be reached by moral remedies or explanations, but by an exact study of the facts and their meaning. They indicate also that the ideas and theories that influence us to permit alcohol to be used as a beverage are delusions of the most destructive character, which must be examined at the bar of scientific study.

Clinical experience and laboratory facts are accumulating in every direction of such magnitude and exactness, sustaining the assertion that the whole problem is a medical and hygienic one and thoroughly preventable in the early stages, and at all times curable to a certain degree.

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Public sentiment is fast crystallizing into the conviction that alcohol should not be used as a beverage, and science is sustaining this view. It is proved that the moderate drinking of to-day is an indication of the excessive drinking of to-morrow, and the resultant armies of alcoholic defects and degenerates can be predicted and traced from stage to stage beyond all question.

Without any doubt, this whole subject will come into the realm of medicine in the near future, and the physician will be the teacher and leader and the vast tides of evil will disappear. The legal efforts to control this evil by fines and imprisonments actually recruits and train a more degenerate class; the wasteful and most extravagant efforts by reformers and philanthropists, and the wild, impractical legislative efforts all fail and press the great central fact home to the physician for help.

Medically the alcoholic problem is not confined to the question of alcohol, but of the conditions which make it possible for alcohol to be used and the disease and degenerations which invariably precede it and inevitably follow.

The practical question is how long shall the physicians follow current theories and neglect to take up this subject? How long will the question of the exact action of alcohol be discussed as if it was the final topic, when the conditions which promote the use of alcohol are neglected, unrecognized and constantly increasing?

Already a small vanguard have entered this field and are urging the profession to recognize the disease and insanity of inebriety. First, the medical colleges must give instruction and prepare their students to become teachers in the community and leaders concerning the means of prevention and cure.

Second, every medical man should take up this subject as a medical and hygienic one, and by treating the moderate drinking man could prevent the disease in its early stages.

Third, every physician should respond to the call to be a teacher and leader and should be able to direct public sentiment how to overcome and neutralize as well as prevent the great evils that spring from this source.

The great efforts of temperance reformers are really voices calling to the physician for help and council and pleading for assistance. The medical side of this great problem is the new field whose possibilities for practical work in saving life, diminishing disease and death, which really exceed the wildest dream of the enthusiast.

DISCUSSION.

DR. VIRGINIUS HARRISON, *Richmond:* I do not believe we will control this matter by legislation. The way to control it is for the medical men to assert themselves in the communities in which they live. Especially is this true where there is a school for young men, where they can drill into them the physical dangers of alcoholism. You can talk to him about the moral side, and he will think about it until tempted, but tell him that to drink whiskey means depression of the brain, and the cry of nature for stimulation. Then you will make him think. Tell him that if he continues to drink he will have some disease of the stomach, or chronic Bright's. Make him think of what it will lead up to. Teach boys in school, before they go out from under parental care, the dangers of alcoholism. One of the great dangers is the fact that the higher centers are depressed first, and the lower centers afterwards. The sexual organs are not depressed until late—sometimes they are stimulated. The man whose moral nature is depressed will be led off to the brothels, and will contract diseases from which he will never recover. They are ignorant; few realize the importance of an ordinary case of gonorrhea. Very rarely they feel that it is anything worse than a bad cold. But when you tell them that it probably cannot be cured; that it requires a microscopical examination to determine the cure of that disease; that he can probably never become the father of a child; that if he does, he may infect his wife, and the wife become a chronic in-

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valid, or may die from a surgical operation within three months of marriage, it gives him something tangible to think about. I believe we can do a great deal of good by teaching the young men before they have the opportunity of contracting dissipated habits and these diseases.

DR. J. N. UPSHUR, *Richmond:* In my experience I see two classes of alcoholics. I am most profoundly convinced of the pathologic side of alcoholism as a disease. One class is where the habit has been acquired, and when the patient has gotten over the effect there is a profound desire on the part of the individual for help. They want to get well; they want to be led back to a position of thorough self-command, and be free from what they recognize as a serious disease. They are the ones who willingly and earnestly give us assistance in treating them.

Another class among the habituals we have to contend with will admit everything you say about the dire results, and yet, withal, they will tell you that while their intentions are good, they do not want to get well. They won't deny it.

The children of alcoholics are more liable to disease. We want the moral force in our legislators that will establish in every state an inebriate institution. We want there salaried men, skilled in the treatment of these diseases, and we want a law so that when these men won't be controlled, and won't help you to cure them, there should be a commission of inebriety to put him into this institution and keep them there until a competent man says they are fit to be turned loose in the community. Unfortunately the moral courage of our legislators does not permit of such legislation. They haven't the moral courage to take a stand of that sort.

Dr. Sajous suggests that at the bottom of the alcoholic habit is a diseased condition of the suprarenal glands, a pathological condition causing deficiency of secretion, depriving the system of the natural stimulation; and feeling this necessity, the subject takes to alcohol. He recommends as treatment the administration of small doses of thyroid extract for thirty days, and then put the patient upon a tonic of chloride of gold and sodium, or strychnine, or alternate the two, and keep this up for a year. I am not prepared to say that there is a great deal in this. But if you strike a patient who does not want to get well, he will take the dose and then in an hour or two antidote it with whiskey. The most important thing in the treatment is restriction, whether they want to or not. Deal with them more or less like children. Put them where you can force them to get well, and do not turn them loose until you know they are fitted to adorn the image of the Maker with which they are clothed.

DR. JAMES W. HUNTER, *Norfolk:* I know of several cases of chronic alcoholism where the cause is attributable to family surroundings. Don't look to the suprarenal glands, but to the stomach. Take the ordinary laborer going home to a squalid wife, to nasty children, and you can see why he wants to go away to his club, the bar-room. Or in the better classes of society, look at the family life of some of them. Insufficiency of food, insufficiency of nourishment, and worst of all a seeming disregard by other members of the family, turned loose, and he seeks solace in wine and strong drink. I do not believe that any enactments along the line of the Maine or North Carolina laws will ever accomplish anything. I can only see one thing they do—deprive the state of the income. There are 2,000 sailors in Norfolk in training at one place, a garrison at Old Point Comfort, and numerous vessels and men-of-war. Visit one of them. You will find plenty of liquor on board, but at the other end of the boat you will find suppression. On shore, however, you will see the jackies all around the worst grog shops in the community. I want to differ with Dr. Upshur: it is not legislation that is needed.

DR. GEORGE ROSS, *Richmond:* I want to correct one thing that Dr. Upshur said in regard to the legislators of the State of Virginia, at any rate. I went before a committee of the Senate and House, and had enacted, with the assistance of others, a bill by which any man or woman, in any circle of society, whose habits have become fixed as inebriates, can be arrested, tried and judged a confirmed inebriate, and sent to an institution and kept

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there as long as the authorities may deem necessary. I had a young subject whom I sent there. When he had been there a month the doctors said he was well. I said, keep him two months. He came back, and for the last two years has been drunk probably four-fifths of his time. He will probably be sent back again. There is the possibility for any inebriate in this State to be sent there and incarcerated.

The only exception I take to Dr. Crothers' paper is that he fails to tell us how to cure it. Here we are dependent upon quacks, as the Keeley Institute men. Why, it hasn't been two weeks since we have had in this town a professional brother of the three-days-cure class, who claims to cure them by the multitude, and give them diplomas of graduation. The end is not yet. I sent a man to the Keeley Institute in Illinois. I paid his expenses there. That fellow stayed sober a year, but he died in this town in an inebriate's stall (it was nothing but a stall), called the inebriate ward in the hospital.

There is no agent that I know of that is a specific. The chloride of gold seems to be a dead failure. I believe that the foundation of the whole thing is moral character, and that Dr. Hunter has pretty nearly hit the nail on the head when he speaks of the importance of the surroundings.

DR. THOS. A. WILLIAMS, *Washington, D. C.:* In the course of my study of the psychoses, I took up residence in a private sanatorium for the compulsory segregation of inebriates. The patients stayed there three years, and the experience of the various superintendents was that these patients nearly always relapsed in spite of the three years of segregation. The patients were from the very lowest class of unskilled laborers. When they went back to the conditions of life they became alcoholics again. It was just as in tuberculosis. These people were not susceptible of education because they were of low mentality. Therefore, the remedy of State care is inadequate, unless there is added to that State supervision after cure. I would like to combine what Dr. Crothers said with regard to alcohol psychoses with what Dr. Peterson said, and point the moral that we as a profession should take the lead, and show the people how to manage these cases in regard to their psychoses, as physical maladies, instead of allowing psychoses to be managed by clergymen or philanthropists who have had no medical training, and who very often lead people wrong. The proper method of treating alcoholism or the psychoses which lead to alcoholism is medical psychotherapeutics—not only psychologists in public schools to examine children, but to teach the people how to manage their own minds. Any neurologist will tell you that he sees daily wrecks of the mind caused by inadequate warnings of how to take care of the mind, just as we very often see wrecks of the body from ignorance as to how to take care of the body.

The alcoholics of one type present habit spasms, tics—study the reasons why the patient makes these movements. On the other hand, there is a class of alcoholics due to the physical depression of high blood pressure. It nearly always leads to melancholia, "the blues," and for which the treatment is dilatation of the vessels.

The medical men should take up the matter, first from the medical standpoint, and then from the point of view of the sociologist.

DR. W. J. INNES, *Brookneal:* Of the various drugs we are taught their therapeutic and food value. As a profession we are divided, certainly as to the food value of alcohol. By some it is regarded as out of place when food value is considered. Dr. Crothers says that it should not be used as a beverage. We are certainly divided as to that. If as a class we are going to help the situation, we have got to be more in accord as to the value of alcohol as a drug, just as opium or its alkaloids.

DR. T. M. CHERRY, *Glamorgan:* If you expect to do anything in the cure of disease you must remove the cause. If we do not get after this question pretty soon, the laity and clergymen will have reached a settlement by removing the cause clear out of our reach. They are doing it every day. It will only be a question of time until the cause will be removed. Then we will have nothing to drink. When you put it up to the legislators to create

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hospitals for the treatment of these cases, they will take the idea that it will be much cheaper to get rid of the cause instead of curing the bite.

DR. T. D. CROTHERS, *Hartford, Conn.* (in conclusion): My object was not to discuss alcohol, or the various remedies for its abuse, but to urge the profession to take up the subject in their various locations, to look for the physical causes, not to inquire for the moral causes. Examine them just as you would any aberration or neurosis. Treat it from the physical side alone. If I have stimulated you to take the matter up, not from any theoretical point of view, I have done my work. I believe most sincerely that this great temperance wave that we must take account of is to put us personally to study the subject. I believe that every layman who comes into the community reflects upon the intelligence of the physician in that neighborhood, who should have done the same thing himself. The physician should have taught that it is a disease. He can do it. There is nothing mysterious or strange in it. It is a matter of fact and our interpretation of it—nothing more. What we want is a law and public sentiment to grab the confirmed alcoholic by the neck and say, if you don't stop, we will take your liberty away from you. We will treat them as we would a smallpox case—put them in quarantine. That is the physician's province.

I want you to recognize the fact as coming up to you personally. I want you to study the subject in this way. Study the facts and follow their meaning. That is the direction of the new modern science of medicine.

THE DIAGNOSIS OF HYSTERIA.

By BEVERLEY R. TUCKER, M. D., Richmond, Va.

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"When in doubt say hysteria" seems to be the motto of some physicians. If in doubt never diagnose hysteria would be the wisest rule to follow. We owe it to our patients and to ourselves to exclude, not only every organic disease, but every other functional condition, before committing our diagnosis to hysteria.

The frequency with which other conditions are diagnosed hysteria is well known—and this error occurs more often than the converse—*i. e.*, hysteria being mistaken for organic or other disease. My history cards will show cases of neurasthenia, hypochondriasis, melancholia, delirium tremens, paralysis agitans, mania, epilepsy, brain tumor, gastritis, appendicitis and organic paralyses—and others, that were previously thought to be hysteria, but I can recall fewer instances in which cases of hysteria pure were diagnosed something else.

The reasons for diagnostic errors are many, for hysteria may simulate more or less closely numerous diseases, or it may be superadded to other conditions, or the symptoms of other diseases may resemble hysteria. Additional sources of error are careless examinations of patients, hasty conclusions, incorrect interpretations of symptoms, and failure to recognize the distinctive signs or stigmata of hysteria.

The first and most difficult question that confronts us to answer intelligently is, What is hysteria? The ancients believed it to be due to vapors coming from the uterus and hence its name.

No adequate definition has yet been given hysteria. Many characterizations of the condition have been given, all holding a part, but none that I have seen containing the whole truth. Some have thought hysteria a phase of multiple personality; others a pathologic suggestibility or a form

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of auto-hypnosis, or a reversion to the primitive, childlike intellect, or a latent sexual manifestation. The basic changes leading to hysteria have been considered to be "breaks in and among the perceptive processes, that the preceipts, the internal reception and interpretation of external inpouring stimuli, are disordered."[1]

Dercum thinks[2] there is a break in the neuron based on the integral action of the neuron and on a supposed movement of the cell processes.[3] Purves Stewart believes hysteria to be "a disease of nerve metabolism, affecting not only the highest or psychical centers but implicating the whole nervous system, cerebro-spinal and sympathetic, in varying degrees, and producing symptoms corresponding with the parts affected."[3] Gowers thinks there is "a primary derangement of the higher cerebral centers, but the functions of the lower centers of the brain, of the spinal cord, and of the sympathetic system, may be secondnarily disordered."[4a] He further says, "Changes in the finer nutrition of the nerve elements may underlie and result from it, but are not recognized by present methods."[4b]

According to Thomas, "the processes of thought in children being simpler than in adults also makes the direct relation of suggestion to the symptoms of the disease much clearer than is usual with adults, and thus is of significance in our concept of the nature and origin of the disease."[5]

Jelleffe says, "All in all, hysteria is the psychopathic manifestation *par excellence*, the most primitive expression, the most common of the inherent weaknesses of human personality."[6]

Thus we see the nosological conceptions of hysteria are varied, and we might quote *ad infinitum* without satisfactory elucidation.

Hysteria may be considered a psycho-neurosis in which the orderly control of emotions and actions is interfered with, probably by altered nerve metabolism, causing improper movement in the cell processes. There is a susceptibility to suggestion, or tendency to pose, and a desire for audience and for sympathy. This is not a definition, nor does it even give a satisfactory conception of the condition, but it will serve to direct our thoughts in the channel of what is to follow.

It would be a huge task to enumerate and describe all of the symptoms which may be seen in hysteria. Many of them are common to other conditions, many are vague and comparatively few distinctive. They may effect the psychic centers, the central or peripheral nervous system or the sympathetic system; usually the whole psycho-neuronic system is affected with one part predominating.

There is a certain type of personality known as the hysterical personality, and certain signs and symptoms frequently present in hysteria, known as the stigmata of hysteria, both of which should be searched for diligently.

In regard to the personality, a large number of hysterical individuals are girls whose ages are in the neighborhood of puberty; but too much diagnostic stress must not be laid to this fact, for hysteria may occur in either sex and at any age. As it also occurs in all races and in both the blonde and brunette type, these considerations are of no import in the diagnosis of an individual case. Much, however, may be learned from the environment of the patient, and weight may be attached to whether or not the family are neurotic, and something gained by observing the attitude of the patient to the environment—and the attitude of those of the environment toward the patient. Elsewhere I have remarked that the spoiled and petted child of a neurotic environment frequently becomes the hysterical girl and woman, whereas the same child, if reared in a proper environ-

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[1]Dr. Mettler's discussion of Dr. Dercum's paper, Journal American Medical Association, November 23, 1907, page 1733.
[2]F. K. Dercum, Nature of Hysteria. Jour. Amer. Med. Asso., November 23, 1907, p. 1733.
[3]Purves Stewart, Diagnosis of Nervous Diseases, p. 307.
[4a]Gowers. Diseases of the Nervous System, Vol. II, p. 984.
[4b]Ibid, p. 1019.
[5]J. J. Thomas, Jour. Nervous and Mental Diseases, April, 1908.
[6]Jelleffe, Hysteria and Re-education, N. Y. Med. Jour., May 16, 1908.

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ment, would hardly have developed the condition. Still, we should remember that every indulged and pampered individual is not hysterical.

Hysterical personalities crave sympathy and insist upon an audience. I have recently run across this appropriate verse—

"But the woman in hysteric glee,
Goes on with her neurotic spree.
She wants that man of hers to see
'Her heart's a surely fail-n'"

Says Oliver Wendell Holmes, "A hysterical girl is a vampire who sucks the blood of the healthy people about her," and Weir Mitchell pertinently adds, "where there is one hysterical girl there will be, soon or late, two sick women."[1]

An uneventful life is not satisfying to a hysteric; it must be varied by emotional storms or crises. These crises are of a dramatic character, for there is in their individual make-up an element of pose. Hysterics, perhaps subconsciously, attract attention to themselves and elicit sympathy, and, when the patient is a woman and pretty, they are usually attractive to men. There have been many hysterical flirts. A word to the wise is sufficient.

Hysterical personalities when often seen are easy of recognition, and experience is our teacher. Because a patient flushes without cause, laughs or cries unnecessarily, or is nervous, easily excitable, or moodily inclined at times, is insufficient ground upon which to diagnose hysteria. These may exist as subsidiary symptoms, but they may also exist where hysteria is not present. With these sidelights upon the personality we now pass to the so-called stigmata or chief symptoms of hysteria.

A few remarks about the symptoms in general may be in order before taking up the chief symptoms. The symptoms are characterized by a loss of normal control—it may be of the emotional sphere, from excessive laughter to an emotional convulsion, or of the higher psychic centers, from a foolish fear to a trance, or of the vaso-motor system, from a blush to dermographia; or of sensation, from paresthesia to anæsthesia; or of motion, from nervous movements to spasmodic contractions; or, from slight inhibition of movement to paralysis; or of general disturbance of mentality, from peculiarity to insanity; or of sympathetic visceral disturbance, from disordered function to suspended function; and, likewise, one may say of the special senses, they may vary from hyperacuteness to inactivity.

Bearing these facts in mind we are aided in separating some of the various types of hysteria and in classifying some of the chief and subsidiary symptoms, although no sharp line can be drawn between them. The recognition of the stigmata is important, for, when present, they only appear typically in hysteria while the other symptoms are not characteristic.

Stigmata. Hysterogenic Spots, limited areas, pressure over which will cause a hysterical attack. The inframammary and inguinal regions are the most important.

Hysterophrenic Spots, pressure on which arrests an attack. The left inguinal region is the best known.

Neither of these must be confused with other tender points which are among the general symptoms.

Anæsthesias.—The most typical are hemi-anæsthesia of the whole of one side of the body, and the glove or stocking shaped anæsthesias of the extremities. Other peculiarities of the anæsthesias are that the hemi-anæsthesia is usually on the left side except in left-handed people. The patient is rarely cognizant of the existence of the anæsthesia until brought out by the examination of the physician. This is because, as Dercum suggests, the part is elided from consciousness and not simply due to change in the peripheral nerve terminals. Hysterical anæsthesia never picks out the area of distribution of an individual nerve. When the extremities are affected,

[1] S. Weir Mitchell. Fat and Blood, p. 37.

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sensation usually returnes from the proximal line toward the periphery, often clearing up in segments, while in organic anæsthesias the whole area fades as recovery takes place. Anæsthesias of the special senses, taste, hearing, smell and vision, are generally unilateral and on the same side as the cutaneous anæsthesias. This combination of unilateral affection of special senses and of cutaneous sensation is pathognomnic of hysteria and does not occur in organic disease.[8]

A curious fact has recently been brought out, viz., in dissociated (hysterical) anæesthesia, tactile stimulation, though not consciously felt, may give rise to the same galvanic reaction as when consciously perceived.[9]

Interesting also are the facts obtained by testing sensation in a hysterical patient recovering from anæsthesia, which consists mainly of an abnormal persistence of sensation to cutaneous stimulation, delayed time reaction before the stimulation is consciously appreciated, non-perception when a more normal sensation is at the same time present, a tendency to immediate motor response to a stimulus, the disagreeable quality of a sensation, expressed as a "queer feeling," "unnaturalness," etc., and the impairment of the sense of personal ownership expressed as "hardly belonging to me," "strange," etc. These are grouped by Ernest Jones under the head of phrictopathic sensations.[10]

Analgesia.—This may be so marked that pins may be stuck in the patient at will. Analgesia may exist without cutaneous anæsthesia. It is most often unilateral and all evidence of organic disease must be eliminated before it is pronounced hysterical.

Hyperesthesia.—Irregular areas of hyperesthesia *not* corresponding to root-areas nor peripheral nerve distribution may be considered hysterical.

Special Sense Disturbance.—Loss, diminution or hyperacuteness of special senses when organic disease is excluded may be evidences of hysteria.

Contractions of Vision and Color Fields.—The vision fields are contracted concentrically and not in the manner of a hemianopia. In the color field blue is first affected and red last, while in organic atrophy, the red field is first diminished.[11]

Contractions of the Trunk and Limbs.—These do not occur in the same positions as organic contractions, and, unless fibrous changes have taken place, they may be easily corrected under anæsthesia, or, at times, by distracting the patient's attention. The contractions are probably due to the patient getting into a position and by auto-suggestion thinking it cannot be corrected. Beevor calls attention to the non-relaxation, or action contrary to intention of antagonistic muscles in hysterical palsies, which is a valuable point in differentiating between functional and organic cases.[12]

To simply enumerate the multitude of symptoms that may be seen in hysteria would serve no purpose and be confusing to diagnosis. We must look for the personality, the stigmata, the general type of the manifestations, and last but not least, we must exclude every possible organic disease, however, at the same time, bearing in mind the fact that true hysteria may be superimposed upon a genuine organic condition.

Most of the symptoms of hysteria may be divided into:

Sensory, as anæsthesia, hyperesthesia, paresthesia, and analgesia.

Motor, as paralyses, contractions, paroxysms, spasms and some tics.

Psychical, as trance, phobia, amblyopia, aphonia, etc. Hysterical pain is considered by some as a hallucination, real and agonizing to the patient, but without pathological basis.

Sympathetic, visceral and vaso-motor, as vomiting, globus hystericus, dermographia and phantom tumor.

of temperature without evidence of inflammation, and tender spots along the spine, on the head, or elsewhere, which cannot be otherwise accounted for.

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[8]Purves Stewart. Diagnosis of Nervous Diseases, p. 321.
[9]Prince and Peterson, Jour. Abnormal Psychology, Vol. III, No. 2, p. 131.
[10]Ernest Jones, Jour. Nervous and Mental Diseases, July, 1908, p. 427.
[11]Purves Stewart, Diagnosis of Nervous Diseases, p. 321.
[12]C. E. Beever, Jour. Amer. Med. Asso., July 11, 1908, p. 89.

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It must be emphasized that no one or two of these symptoms is sufficient for a diagnosis of hysteria. The type of variety of a hysterical explosion is chiefly of importance in relation to what other condition it may simulate. The grand hysterical convulsions of Charcot, consisting of a succession of distortions and poses are rare, and their existence has been doubted. I have had the opportunity, however, of studying several such cases. Paroxysms resembling epilepsy are much more common, while cataleptic and trance states are at times observed. The most frequent manifestations are those simulating paralysis and those arising out of a neurotic environment grossly resembling neurasthenia, melancholia and hypochondriasis.

It has frequently been stated that the great emotional storms which have swept over the face of nations and made the history of massacres, revolutions, inquisitions, crusades and religious reformations so readable and often so horrible, are manifestations of epidemic or pandemic hysteria. With this belief I entirely disagree, for I believe they are widespread psychic emotional reactions of excitement and are not hysterical. Hysterical people are more or less cowards, too selfish to make sacrifices, their sphere of action restricted, and their emotions too unstable for prolonged strain. I venture to say that many more hysterics during these strenuous times would be found at home paralyzed with fright or having convulsions at horrible sights, or, reversing the biblical order, and weeping with those who laugh and laughing with those who weep.

Neither are the leaders hysterics. Nero may have been a maniac, Henry VIII a pervert, Joan de Arc a paranoiac, Cæsar and Napoleon epileptics, but I have never heard of a well known leader in history who was a hysteric.

In considering the differential diagnosis of hysteria only a few of the diseases which it may simulate have we space to discuss.

In the distinctive diagnosis between hysterical and organic palsies we must remember that hysterical palsies are usually of the spastic type, but there is never present the Babinski phenomena. The deep reflexes are never absent, as they often are in organic diseases. Hysterical paralyses never attack single muscles nor the muscles supplied by a single nerve. Reaction of degeneration never occurs in hysteria.

The atrophy of hysteria is never accompanied by fibrillary tremor. Hysterical contractions, unless of long standing, cease under anæsthesia. In hysteria loss of the pupillary light reflex does not occur. Incontinence of feces and urine is extremely rare, although I have seen it in at least one truly hysterical case. In hysterical hemiplegia or paraplegia the inner border of the foot is usually dragged, while in organic cases, it is the outer border. The ankle-clonus of hysteria is easily exhausted and at the beginning voluntary contractions of the muscles can usually be felt and the rhythm of hysterical clonus is irregular.

The positions of the limbs in hysterical paralyses may grossly resemble that of organic disease, but there is never an exact similarity. Hysterical paralysis may be overcome by an electrical shock, fright, manipulation, or suggestion. We have all heard of hysterically paralyzed patients making an agile escape from a burning house.

Certain tests are useful in partially paralyzed patients in making the diagnosis of functional or organic paralysis. If the patient, with the arms folded, on arising from a lying to a sitting posture flexes the hip, and the heel of the partially paralyzed side is raised, the case is organic.

In incomplete organic hemiplegia, the patient lying on the back, can lift either lower limb separately but cannot lift both together.

If, in an incomplete organic hemiplegia, the patient, lying on his back, lifts the affected limb, and we lift the other, the partially paralyzed limb drops, but if the patient lifts the good limb and we lift the affeced one, then the unaffected limb does not drop.

Babinski has discovered that in organic hemiplegia there may be paralysis of the platysma, while in functional hemiplegia this is not so.

In paraplegia, if we lift one limb and find that, because of rigidity, the other limb is raised also, then the case is organic.

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With these points in view, and bearing in mind the other stigmata of hysteria, one can reach a correct conclusion.

I have recently seen a case of hysterical hemiplegia in which the speech was also affected. This attack came in a woman one year after her husband died of an organic hemiplegia and simulated it almost exactly. The above tests and contracted vision fields enabled a proper diagnosis to be made and the patient was induced with a faradic shock and suggestion to quickly walk and talk correctly.

Early multiple sclerosis is often mistaken for hysteria, but the scanning speech of multiple sclerosis and the nystagmus must be looked for and the stigmata of hysteria excluded.

The diagnosis of hysteria from other functional diseases and certain mental troubles is at times difficult. If we study hysteria we will not confuse it with simple nervousness.

Neurasthenia, according to Mitchell, is essentially a chronic fatigue due in part to mal-nutrition, in part to functional overexertion, occurring in persons with a predisposition hereditary or acquired. He further says that from hysteria, except when the two are actually mingled, diagnosis should be possible by the absence in neurasthenia of crises, paroxysms, emotional storms, paralyses, contracted vision fields and anæsthenias.[13]

Hypochondriasis may be mistaken for hysteria. The hypochondriac pays undue attention to trifling symptoms. Various complaints soon become senseless and an abrasion on the skin may be considered syphilis, or they may believe their brains shrunken up or their stomach melted away, etc. These are often accompanied with hallucination of sight and sound, and delusions of persecution may develop. Their emotional crises may lead to such impulsive acts as suicide. Hysteria lacks these profound mental attributes and is characterized by its own peculiar personality and stigmata.

From *Melancholia*, hysteria may be told by the absence in melancholia of a desire for audience, by the presence of genuine distress. The melancholiac in the agitative period wrings the hands and walks the floor in mental anguish even when alone, and in the depressed state sits with bowed head and fixed expression. This distress may be traced to delusions and hallucinations; they are unworthy and have committed the unpardonable sin, etc.

Epileptic Convulsions have been confused with hysterical seizures. In a hysterical seizure the patient falls, if she falls at all, without injury. She frequently talks or screams in the attack, the pupils react to light, the movements of the extremities are wide and purposeful; she may fight or bite at surrounding objects or people; her position takes the character of a pose and there is usually no after stage of stupor. The tonic, then clonic, stage of convulsion, biting of the tongue, foaming at the mouth, and other symptoms of epilepsy are absent.[14]

Psychasthenia pure has been described, but I have never been satisfied that such as a separate condition exists, for most of the cases reported under this head appear to me to rather belong either to neurasthenia with a superadded hysteria, or to hypochondriasis, or to hysteria.

Hysteria is sometimes diagnosed upon individual symptoms as cough, phantom tumor, vomiting, anuria, hiccough or ovarialgia, etc., but a patient presenting one of these symptoms alone without other hysterical manifestations or stigmata cannot be said to be suffering from hysteria. In every case most careful examinations must be made to exclude every possible organic cause and even a functional disorder of some organ should not be diagnosed as hysterical unless there is additional ground upon which to base your diagnosis. It never occurs, in the writer's opinion, that hysteria affects the function of a single organ alone.

In conclusion it may be said that carelessness and prejudice are the two main factors in an erroneous diagnosis of hysteria, and it is needless to state that these errors often work an injury not only to the patient and

[13]John K. Mitchell, Johns Hopkins Bulletin, Vol. XIX, No. 302.

[14]Beverley R. Tucker, Epilepsy, N. Y. Med. Jour., June 6, 1908.

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the physician, but also to the friends and family of the patient and to the medical profession.

402 *West Grace Street.*

DISCUSSION.

DR. THOMAS A. WILLIAMS, *Washington, D. C.:* Hysteria should never be diagnosed unless we can positively do so, and unless we cannot diagnose anything else. Hysteria is a disease of positive symptoms; not the mere absence of definite organic symptoms.

It is a common impression that since the death of Charcot, in 1893, the study of neurology has stood still. It is not true. Charcot had a large number of followers, most of whom are working in Paris. They have defined what we mean by hysteria.

I would like now to mention a few of the individual points which Dr. Tucker has touched upon, and to conclude by reading the conclusions which the Paris Neurological Society has reached after six or seven years of careful study.

In regard to the hysterogenetic zone: This may be any part of the body you choose to name. The point is that there is not actual hypersensibility, but that the patient believes that by pressing upon the part he ought to have an hysterical fit. I have seen a great many cases in which, by education of the patient, I could produce an hysterical fit by pressing upon the hysterical zone. Then if I suggested that, by applying a ligature, I could eliminate the fit, the patient would not have it.

The cases are innumerable in which anæsthesia has been suggestible by will, and others more innumerable, without it, unconsciously, in an examination of the patient.

In regard to the hysterogenetic zone: This may be any part of the body the rule of Dr. Tucker does not apply—lesions in the neighborhood of the optic thalamus, in which it clears up from the periphery towards the trunk.

In regard to their ability to stand pain: We all know that showmen can stick pins into themselves. They feel pain, but have made themselves resistant to it. We also know that hysterics are really conscious of all the impressions they receive. The unconsciousness is assumed.

It must be remembered that a great many cases reported hysteria are dementia præcox, the patient being abstracted, far away in a dream and hence does not feel the pain for the time being.

In regard to the convulsions, I also have seen the typical convulsions of the Charcot attack, especially in the patients educated in Charcot's day to have the attack. One is struck by how often reaction to painful emotion takes the form of stiffening of the whole body. There is the condition of opisthotonos, because all the muscles are in severe extension, as in strychnine poisoning, tetanus, meningeal irritation, etc., the erector spinæ muscles being more powerful than the flexor spinæ.

DR. C. M. HAZEN, *Bon Air:* The remarks that have been made seem to reduce the whole subject to suggestion or auto-suggestion. It is important to have the two conditions carefully separated—neurasthenia from organic trouble; real mental delusions from simple hysteria—always making a clear diagnosis. It is impossible unless familiar with the conditions from the various standpoints, surgical, medical, neurological and psychic. It will not do to limit hysteria entirely to suggestion or auto-suggestion. On the other hand, we do not want to fail to look for some organic trouble. Why shouldn't hysteria be associated with any organic trouble? In treating hysteria, it is just as necessary that the patient be in thoroughly good physical condition as in any other. Three cases I have had recently are interesting in this connection. Two of them were under electrical treatment at Memorial Hospital. One of them finally scouted the idea that electrical treatment could do any good, and left the hospital. The other always improves under electricity. There is pain in the appendiceal region, and lack of sensation. That is the case in which neurasthenia is at the basis of it. Gentle stimulation raises self-control until all the symptoms are gotten rid of.

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The third case was that of a little girl, at puberty, living in the country. Her mother said the child was going crazy. She couldn't give medicine because the child wouldn't take it. She must not cross her because it threw the child into a fit. I knew the child. She needs a good whipping, and needed it ten years ago.

In all these cases there is an element of lack of self-control, but they can be controlled by others. The feeble part in their psychology is in the will power. Eliminate everything of an organic character, and then get down to what is really hysterical, and act accordingly.

DR. BEVERLEY R. TUCKER, *Richmond* (in conclusion): One of the things that Dr. Williams suggested to me was the fact of the hystogenetic zone being on any part of the body. That is perfectly true if the patient is subject to suggestibility to any great extent. But I think the best known are the inframammary and inguinal. This is probably because there is a peculiar tenderness and sensitiveness on pressure in these regions, not exerted, for instance, over the tibia or mastoid. These fits are probably superinduced by suggestion, but there is a certain tenderness there, and when the patient feels that, it mounts up, and the emotions go up to an hysterical attack.

The area of anesthesia caused by a lesion in the optic thalamus clearing from the periphery proximally is not antagonistic to what I said about hysterical anesthesia, which clears towards the periphery, and often in segments.

I do not think the hysteria we see in this country is exactly like the hysteria we see abroad. That which I saw in Vienna was of a more grand type than what we see in America. I think the peculiar set of symptoms developed in spoiled, pampered individuals is more peculiar to America because this class of people is much smaller in Europe than in America, though overindulgence is not hysteria in itself.

Dr. Hazen calls attention to the fact which I mentioned very briefly that hysteria is very frequently superimposed upon some other condition, either functional or organic. Very often it is connected with states of insanity. That there has been a good deal of hysteria that has gone on to certain insanities, I hardly believe, but I think hysteria is superimposed upon insanity very frequently, and frequently insanity is superimposed upon hysteria. There is no harder diagnosis to make than a mixed case of hysteria, and there is no more important diagnosis to make, because we may do the patient great injury, and we fail of any conception of the treatment of the case at all, unless we recognize the combination of two functional, so-called, or functional and organic conditions.

SERIES OF CASES OF ACUTE ANTERIOR POLIOMYETITIS OCCURING IN SALEM AND VICINITY.

By J. C. DARDEN, M. D., and R. M. WILEY, M. D., Salem, Va.

During the past summer there occurred in Salem and adjacent country a small epidemic of acute anterior poliomyelitis. The first case developed June 2d and the last one reported to the Board of Health was August 10th, the total number of cases being twenty-five. Sometime previous to this outbreak the weather had been intensely hot, but not dry; on the contrary, the prevailing humidity was high. After several cases had developed they were reported to the State Commissioner of Health, and he was asked if the disease was prevalent elsewhere in the State. Singularly enough, he reported that it was not reported from any other locality. Just why this town and adjacent territory was visited by this epidemic we are entirely unable to explain, as the authorities do not class this as a contagious disease, and so far as we are aware there

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were no local conditions which might have produced this disease, outside of the intense heat and high humidity; however, this condition of the weather obtained generally in this section of the State. Neither did this epidemic follow in the wake of an epidemic of any acute infectious disease, as is sometimes the case.

As to the specific cause of anterior poliomyelitis, the authorities are not agreed as to whether it is of infectious or toxic origin, although it is our personal opinion that it is due to a specific organism. The cases in Salem and adjacent country totaled twenty-five—a strikingly large number—whereas Roanoke, a city of about thirty-five thousand inhabitants, seven miles east of Salem, connected by a trolley line, and daily visited by scores of Salem people, escaped, as we are informed by the Roanoke health officer, with only a single case, occurring in September, quite a while after the development of the last one of our cases. The reports in some of these cases are not as full and complete in detail as we would desire, due to the fact that in some cases the attending physicians did not record notes on these cases, and therefore were able only to recall the main points in each one. The main purpose of our paper is to call attention to the occurrence of such a large number of cases of this disease, practically amounting to an epidemic, which, so far as we know, is without precedent in this section of Virginia. We regret our inability to shed any new light upon the obscure points in this disease, either as regards etiology, pathology or treatment, but we hope by this report to evoke an interest in, and a discussion of, this subject. A detailed report of the cases follows:

Cases reported by our colleague, Dr. J. P. Killian, Salem, Va.

Case No. 1.—Male; aged three; family history good. Was called June 19, 1908. Patient quite prostrated; pulse rapid; temperature 103; left arm partially paralyzed; left leg entirely so. This condition continued for about ten days; then patient began to improve slowly, and in three weeks was able to walk by dragging leg, and now, after nine weeks, able to walk quite well.

Case No. 2.—Reported by Dr. J. P. Killian. Male; aged three and one-half years; first visited June 27, 1908; temperature, 104; severe headache; rapid pulse; left leg completely paralyzed; within a few days fever disappeared and patient began to improve. Now, at the end of nine weeks, patient can walk across room.

Case No. 3.—Reported by Dr. J. P. Killian. Male; aged three years; presented the following symptoms: Fever; headache; partial paralysis of right arm and right leg. Patient has made perfect recovery in eight weeks.

Case No. 4.—Reported by Dr. J. P. Killian. Female; aged two years; partial paralysis of left leg and left arm. This was a mild case, with apparent complete recovery.

Case No. 5.—Reported by Dr. J. P. Killian. Female; aged fourteen months; was called August 16th; temperature, 101; pulse, 120, with complete paralysis of all the limbs. This case had a fatal termination on the tenth day as the result of the involvment of the respiratory center, which became manifest on the sixth day of the disease.

Case No. 6.—Reported by Dr. J. L. Stearnes, Salem, Va. Infant; female; aged eighteen months; first visit was June 2, 1908; found paralysis of left leg and retention of urine. Child evinced great pain when moved; temperature, 103. At this time (August 24th) patient shows gradual improvement, as it can move its leg, but is not able to walk.

Case No. 7.—Reported by Dr. J. L. Stearnes. Female; aged two years; on first visit found patient unable to walk or stand alone; suffered pain when moved; temperature, 102; difficult urination. This was a case of partial paralysis of both legs, with full recovery.

Case No. 8.—Reported by Dr. J. L. Stearnes. Male; aged eighteen months. This was a case without special niterest, in which both legs were paralyzed. One leg has regained its function, but the other remains almost entirely paralyzed.

Case No. 9.—Reported by Dr. Samuel M. Terrill. Boy; aged four years; first visit July 13, 1908; pain in head; nausea; profuse sweating; mild fever; next day temperature 104; severe pain in head, back and limbs; July 15th temperature 105, with continuance of severe pains in head, back and limbs; child slightly delirious. On this day it was first diescovered that all the limbs were partially paralyzed, and there was a complete right-sided facial paralysis.

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The fever and pain subsided in a few days, and ten days from onset of disease there began a gradual recovery from the paralysis of the limbs, which at this time has completely disappeared, though the facial paralysis still exists to a noticeable degree.

Dr. S. I. Conduff, Hollins, Va., reports the following cases:

Case No. 10.—Dr. S. I. Conduff, Hollins, Va. Female; aged two and one-half years; white; has had none of the infectious diseases; and prior to this attack has been perfectly healthy. Temperature, 103; vomiting; general malaise; profuse sweating. On second day diarhœa developed, lasting three days. Child was extremely sensitive to touch or any movement of the body; preferred to lie quietly in bed. On fourth day paralysis of both legs developed. Temperature returned to normal on the sevneth day. Child had retention of the urine, beginning with paralysis and lasting four or five days. The acute symptoms lasted ten days, since which time there has been a gradual improvement.

Case No. 11.—Reported by Dr. S. I. Cunduff. Boy; colored; aged three years. Previous history one of uniform good health. Attack ushered in by headache; temperature, 102; vomiting; pain in head, back and limbs, with a decided objection to being moved. On the fifth day he developed a paralysis of both legs; one eye and corresponding side of face also affected. The paralysis of the legs has improved to the extent that the boy can walk, but with a staggering gate, which, however, is greatly lessening. The paralysis of the rectus externus, however, shows no improvement.

Cases reported by Dr. J. C. Darden, Salem, Va.:

Case No. 12.—Male; aged three and one-half years. I was called July 1st to see this child, who had been complaining for three or four days. Found patient suffering from pain in spine, head and limbs, and the skin was sensitive to the touch. Temperature, 102. Child had no desire to eat, and had vomited a few times. There was profuse sweating. In examining this child I discovered a slight limping in the right leg. Two days later the right leg was completely paralyzed and the left leg slightly involved. Further than this the paralysis did not extend. Within two weeks the child began to move the toes of its right foot, and since that time there has been a slight but gradual return of the use of the paralyzed muscles, and the patient is at the present time able to walk unaided, though there is some drag in the right foot.

Case No. 13.—Female; aged sixteen months; white. First called to see this patient August 6th. Parents said it had been feverish and fretful for three days, and the day previous to calling me they noticed child could not walk as well as usual. Examination revealed the following facts: Temperature, 101; tongue coated and bowels constipated; considerable sweating. The child cried when touched, and objected to being turned over in bed. The left leg and thigh were completely paralyzed. Within a week the fever subsided, and twelve days from the onset the child was able to flex its toes. During the succeeding week it could move its leg. At the present time it can walk by the aid of its mother's hand, but the affected muscles are very weak and considerably atrophied.

Cases reported by Dr. R. M. Wiley, Salem, Va.:

Case No. 14.—Male; aged three years; first visit June 26, 1908, history of child who had been complaining a few days before I was called, and I was summoned because the child could not walk. On first visit discovered complete paralysis of left leg; temperature normal, though the patient had, no doubt, had fever before I was called. Child had pronounced hyperæsthesia when moved, and begged not to be disturbed. When lifted its head would fall back, showing a loss of power in neck muscles. In course of two and one-half weeks began to show improvement; could move leg and hold it up. Suffered relapse July 26th, and again leg was paralyzed. In course of week he regained use of leg, and at my last visit (August 10th) he had been walking, but with a decided limp.

Case No. 15.—Boy; colored; aged four years; first visit July 4, 1908. Child had been sick a day or so when I was called. Complained of headache, backache and pain in limbs; vomiting and moderate fever. Paralysis of one leg developed on July 7th, and the next day the other leg was paralyzed, and the next day both arms were affected. Fever of a high type continued and the respiration and heart's action both became irregular. Both sides of the face and the muscles of both eyes were also paralyzed, showing that the inflammatory process in the cord had extended to the medulla oblongata. In fact, paralysis

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was so complete that the child could not move either limb or even turn its head or rotate its eyes. Sphincter control was entirely lost. This case also showed a characteristic symptom, profuse sweating. In about two weeks from onset the breathing improved in character, and the child was able to slightly flex its fingers and toes, and the prospects for recovery appeared good; but within another week the respiration became more involved, and the child died from respiratory failure after surviving four weeks. This case serves as an exception to the statement of Starr that the prognosis is favorable if the child survives as long as ten days from the onset of paralysis.

Case No. 16.—Female; aged three years; white. This proved to be a rapidly fatal case, as is shown by the fact that my first visit was on July 17th, and the child died on July 19th. On first visit the child had moderate fever, complained of headache, and evinced pain upon being moved. A paralysis of one leg was evident on first visit, and on second day there was a complete paralysis of all the limbs; respiration was much embarrassed, being irregular and rapid; heart's action was also irregular and rapid. The child's expression was one of extreme terror. It died on the third day of cardiac and respiratory paralysis. There was in this case a paralysis of the muscles of deglutition, as well as the muscles of the face and eyes.

Case No. 17.—White; male; aged six years. This was a very slow case in development, as the child had been sick for six days, complaining of general malaise, with a moderate fever, before any signs of paralysis appeared, which was on the sixth day. This consisted of a partial paralysis of one leg. This case was so insidious in its development that the diagnosis of the consultant and myself was typhoid fever. This proved to be a mild case, with complete recovery.

Case No. 18.—Male; white; aged three years. This case had experienced none of the infectious diseases of childhood. On first visit patient showed moderate fever and complained of general aching. Paralysis of one leg discovered on third day. Beyond this the trouble did not extend. A gradual improvement began in two and one-half weeks from the onset, and in a few days the child was able to walk, but even at the present time there is a decided dragging of the affected leg.

Cases reported by Dr. E. W. Davis, Salem, Va.:

Case No. 19.—Male; aged three years; white. This case presented no points of special interest. Both legs were completely paralyzed, from which child has recovered, with exception of slight dragging of the left foot.

Case No. 20.—Male; colored; aged three and one-half years. Partial paralysis of left leg and right arm. This case completely recovered.

Cases reported by Dr. W. P. Norris, Salem, Va.:

Case No. 21.—Aged four years; colored; male. Symptoms: Langor; temperature, 102; tongue white-coated; pulse about 110 when first seen; constipated. Has had roseola; no other history; third day paralysis of left arm and leg. Recovery now nearly complete.

Case No. 22.—White; male; aged thirteen months. When called child was vomiting; two or three degrees of fever; very restless. Child seemed to improve after first visit, until the fourth day, when paralysis of right limb came on. Recovery almost complete in two weeks; now complete; no previous disease.

Case No. 23.—Colored; male; aged three years; history negative. When first seen was paralyzed in left arm; could not swallow well for two or three days. Recovery in ten days.

Case No. 24.—White; female; aged two years; no history of previous disease. Symptoms: Vomiting; restless and high fever; bowels very loose for several days; fever continued until fourth day, when paralysis first noticed; affected left arm and leg; no improvement noticed for six weeks; child now much better, but not completely recovered; in all probability will not; fear leg will never be normal, as there is now indication of atrophy.

Case No. 25.—White; female; aged fifteen months. This case had a partial paralysis of right leg; complete recovery in three weeks.

Summary.—An analysis of these cases shows the following points of interest: The disease was confined to children under five years of age, except in one case, a boy of six. The youngest subject was thirteen months. Number of cases in which one lower limb was involved, seven; number of cases in which

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one arm only was affected, one; number of cases in which one arm and leg paralyzed, five; number of cases in which arm of one side and leg of opposite side affected, one; number of cases in which both lower limbs involved, six; number of cases in which all limbs paralyzed, four; number of cases showing bulbar paralysis, five; number of deaths, three, which shows a mortality of 12%, which is higher than is commonly accredited to epidemic infantile paralysis, the authorities stating it to be 6 or 7%. In the sporadic form of this disease fatal termination is said to be a rare occurrence. In all the fatal cases there was respiratory and cardiac paralysis. A feature in many of these cases worthy of note, because it does mislead many of the laity and possibly some of the profession, who have not had experience with this disease, is the extension of the head, which is due to a paralysis of the neck muscles in contradistinction to the rigid retraction of the head in meningitis. Number of cases in which there was complete recovery, eight; number of cases of incomplete recovery totals fourteen. Each of these fourteen cases of incomplete recovery has shown some improvement, and it is possible that some of them may yet ultimately recover, as it is stated by Allen Starr that "as a rule such improvement is likely to go on for two years." A striking feature in a majority of these cases was pronounced hyperæsthesia. Another was profuse sweating. The fact that not more than one case occurred in any house, although in many instances there were other children in the family who mingled with the affected child, would seem to prove that the disease is not contagious. Following a decided drop in the temperature of the weather, which occurred in the latter part of July, no new cases developed for three weeks until a return of the hot wave, which occurred early in August, when two additional cases developed on the 6th and 10th of August, respectively, thus apparently sustaining the belief that hot weather is in some way essential to the development of this disease.

Treatment.—In regard to the treatment we regret to say that our colleagues failed to make any report. Personally, we administered salicylates and applied counter-irritation, either in the form of a mustard plaster or tincture of iodine to the spine during the acute stage. The subsequent treatment consisted of ascending doses of potassium iodide to promote absorption in the inflammatory area in the cord. Strychnia in increasing doses to the point of toleration for its tonic effect. We also employed massage, warm baths, and, whenever practicable, the galvanic and faradic current. None of these cases has as yet developed deformities, consequently we have nothing to report in the way of orthopedic treatment, although we are well aware of the great importance of orthopedic apparatus and of tendon and nerve transplantation in the later treatment of these cases for the resulting deformities.

CASE OF TETANUS.

By H. COLLES GRANT, M. D., Waynesboro, Va.

In offering this brief paper, there are two points to which I would like especially to call attention. The first is the nature of the injury, in the case which I will cite, and the second is the subsequent hemorrhage apparently from the stomach.

On June 10th last Mr. S., age thirty-five years, walked into my office to have a wound dressed, which he had received while working at a sawmill. He had no idea of the nature of the missile which caused the wound, as he was some distance from the machine when struck, and was rendred unconscious by the blow for a few seconds.

The wound was a small oval opening on the bridge of the nose, just between the eyes, and measured half an inch in diameter. There was a clear

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opening into the nasal cavity, which apparently extended no farther. The nasal bones were perforated by the missile.

I cleansed the wound with a 1 to 4,000 bichloride solution and removed the loose bone, then applied a wet bichloride dressing. I examined the post-nasal pharynx to see if there was any bleeding from the nose, and could see none, though I swabbed up behind the soft palate with a cotton applicator.

Patient returned the following day to have the wound dressed, saying that he felt first rate.

The next day I was called to his house to dress the wound, as he complained of feeling light headed and nauseated.

On the morning of the 13th, three days after the injury, I was sent for in great haste, as Mr. S. was having severe hemorrhages from his stomach and was vomiting quantities of blood. On arriving I found that he had vomited a full quart of blood, mostly clotted. I administered dram doses of fluid extract of ergot every fifteen minutes for four doses, which had no effect in controlling the hemorrhage. Then I sent to the nearest drug store for an ounce of adrenalin chloride.

He continued to vomit at intervals of a half hour, the blood being free and not clotted, for four hours. The vomiting ceased after giving one dose of adrenalin, and he began to feel better. He lost in all fully three pints of blood. I examined his pharynx between the attacks of vomiting and could find no bleeding from the nose.

He began to improve again, the wound remaining open and doing nicely.

On the twelfth day after the accident he complained of a feeling of stiffness about his jaws, and on examination I found the muscles of mastication and the muscles in the neck to be noticeably rigid. There was slight elevation of the eyebrows, and the abdominal muscles were slightly stiff. I sent for anti-tetanic serum at once, which I received in an hour, and administered it every four hours in 1,500 unit doses.

On the following day I had consultation, and under chloroform we found that a probe following the track of the missile penetrated in a direct backward course for a distance of four inches.

The wound was then curretted and syringed out with peroxide of hydrogen, packed with gauze, which was continued daily as a dressing.

He was given in all 24,000 units or 160 c. c. of the anti-tetanic serum. In spite of treatment, the patient continued to grow worse, until on June the 28th he had a severe convulsion, which was relieved after giving a half grain of morph. sulph. and a half ounce of somnos. I continued the somnos to allay irritation of the nerve centers and fed per rectum for six days, the patient being unable to swallow.

On July the 6th the muscles began to relax, and he made an uneventful recovery.

I believe the anti-tetanic serum was the most potent factor in bringing about a recovery.

The hemorrhage, which was apparently from the stomach, I have never been able accurately to account for. I think the wound was undoubtedly from a bullet, and the seat of infection beyond the opening in the bridge of the nose.

I would like very much to hear the opinion of some of you gentlemen, especially in relation to the hemorrhage and the anti-tetanic treatment.

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THE MEDICAL PROFESSION AS REPRESENTED IN THE UNITED STATES NAVY.

By PRESLEY M. RIXEY, M. D., Washington, D. C.,
Surgeon-General United States Navy. (*Invited Guest.*)

It is a peculiar pleasure to be here to-day among my professional brethren of my native State and to tell you of the medical profession as represented in the United States navy. It is represented by 350 medical graduates, divided between the various grades, from the ranking chief of the medical corps to that of acting assistant surgeon. Each member of this branch of the service should be more than ordinarily expert, as by a board of specially selected medical officers of the navy he is chosen from among the graduates of our best medical colleges. (The proportion of candidates who are successful is one to four, and this alone indicates the high standing of attainment which is required.)

After the entrance examination the young graduates are ordered on duty in hospitals until the beginning of the next session of the Naval Medical School, where the fullest preparation can be made for their future career as naval medical officers. The course extends over a period of six months, and looks to the preparation of the young medical officer for his subsequent duties, peculiar and distinct in many respects from the work of his civil colleagues. It is essentially practical in character, and includes special attention to tropical medicine, bacteriology and other laboratory work, naval surgery, instruction in signals and drills, the discipline and customs of the service, ashore or afloat, uniforms and sidearms, together with the manner of using them—in short, everything that is necessary to a proper familiarity with the purely professional and military aspect of a naval medical officer's career. When they have completed this course the young officers make their first cruise.

The professional opportunities for naval medical oficers are liberal and broad and of a character amply gratifying to ambition, both in point of pathological material and means of diagnosis and treatment and also in matters of sanitation and scientific investigation. While harmonious action and general efficiency in the corps is of prime importance, individual merit is thoroughly appreciated, and all original investigation or any initiative in meritorious directions is encouraged and facilitated. In addition to the professional opportunities at the various naval stations at home and beyond the continental limits of the United States, medical officers enjoy the enlightening advantages of broad travel and opportunity to see and study the diseases of every climate and part of the world. They come in contact with their professional colleagues of every nation, and are constantly placed in a position to observe the methods of practice in new medical and surgical fields.

A doctor enters the service as an acting assistant surgeon, and on the first day of October following he is ordered to the Naval Medical School for a period of six months. At the expiration of this tour of duty the whole class is examined for the position of assistant surgeon, the standing of each in the class during the school term being taken into consideration and fixes his standing in relation to the officers of the corps for all times, so far as rank and pay are concerned. The only chance of the status of an officer being changed is by special act of Congress or court-martial.

Three years from the date of his commission as assistant surgeon an officer is entitled to promotion if found qualified physically, mentally, professionally and morally. After this promotion takes place as vacancies occur in the higher grades, and preliminary to every promotion there is a professional and physical examination to determine the fitness of the particular officer, the basic requirements of which are that the officer shall keep abreast with his profession in every essential line of its progress and with the changing conditions in service development. The naval medical profession under seagoing

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conditions and environments and among seafaring people and the members of the profession who are devoting their careers to this sphere of activity have long formed the subjects of interesting articles, and it owes its existence to the daring spirit of adventure and the progress of navigation in early modern times; but the regular establishment of a medical department as a distinct feature of the organization of ships may be properly accredited to "a later period, when, in consequence of the jealousy of European nations with respect to their commerce and colonial possessions, warlike disputes at sea became frequent between them." Thus the calamities of war were added to the already existing inconveniences and actual distress from disease and injury in general and of a character peculiar to ship-life.

The appointment of surgeons to ships now became necessary, and the government of each country, having maritime concerns, realized the desirability, for humane and economic reasons, of making suitable provision for this new branch of practice. The improvement in naval tactics, the increased size of ships and the greater length of voyages, as compared with ancient and mediæval times, naturally led to it. Moreover, the longer cruises upon which ships began to venture carried the seamen into strange and trying climes and exposed them to new and unknown diseases. And, again, the development of the art and implements of war by land and sea was attended by improvement in the methods of destruction, and in consequence of the increased danger to health, life and limb, the surgeon became an indispensable appendage to the ship, and naval establishments were recognized fields for medical work of just as much importance as military establishments or civil communities. The beginning was humble and the development slow and not uninterrupted; but through the various disheartening vicissitudes representatives of the profession who had chosen the sea as the theatre of their careers exhibited a self-sacrificing loyalty to humanitarian appeals and a dogged determination to win their legitimate positon A foreseen destiny was the only encouragement. The appointment of naval surgeons in European countries seems to have been made at a very early period, but, owing to the poor condition of the marine and the very puerile nature of sea engagements at that time, their position was trifling and regarded with contempt. The life of these pioneer representatives of our great profession in naval service was far from enviable, and their devotion to their calling under such trying conditions should make them heroic in our eyes for what they endured. The crudeness of their provisions and the difficulties under which they worked are graphically depicted in the following historical note concerning preparation for battle:

"First See that your Allop, or Platform, be laid as even as possible, with a Sail spread smooth upon it; which you must speak to the Commander to Order. In Merchantmen the Chyrurgeon's Place is usually in the Cable Tier between Decks, but in Men of War 'tis in the Hold abaft the mast, between that and the Bulk-head of the Cockpit from side to side.

"In the Place you must have two Chests to set your wounded Men on to dress them.

"And at the Corner of the Platform you are to place two Vessels, one with water to wash Hands in between each Operation, and to wet your dismembering Bladders in, and for other Services; and the other to throw amputated Limbs into, till you have opportunity to heave them overboard. You must likewise place good store of Lights about the Platform, in Lanthorns; but two of the largest (without Lanthorns) in the place where you are to operate.

"You must have there in readiness your Instruments both large and small, and your first intentions must now be there ready, with your Restringent Powders, Rowlers, Linnen, Cross Bolsters, Tow, Acetum, Ova, broad Tape to make Ligature, and narrow to bind on splinters (for Apparel for fractures must not now be missing) also Basons to mix your Restrictive in, Pannikins to warm your Oyls in, and to dissolve your cerots (which can be done over your large candles), have likewise your Cordial Bottle ready at hand to relieve men when they faint.

"And your Surgery Chest must not be far from you, least you should have occasion for anything therein; as the Traumatics, other Vulneraries.

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"And now being thus accommodated, you are in competent readiness for wounded men when they shall be brought down."

Beginning with such primitive provisions for the bare necessities in accommodations and supplies for the sick, and the humiliating position of the ship's surgeon as depicted by Smollett in "The Adventures of Roderich Random," the change has come. But it is a far cry from early conditions to the present splendid advance of medical science and its mode of application in the naval service.

It is interesting to note that the history of the profession in the navy of the United States began in Virginia, where, as early as 1775, the opportunity for identification with sea-life took place naturally, in consequence of the first attempt to develop the American navy into a distinct arm of the national defense. At this time, foreseeing the coming struggle with the mother country, the House of Burgesses of Virginia appointed a board of naval commissioners who adopted a plan for the creation of a naval force, which, though at this time the merchant marine was not usually provided with doctors, included the commissioning of naval surgeons—men who, in lieu of any medical college in America, had been forced to go abroad to the universities of Edinburgh or Cambridge to obtain a diploma. It was after this, though but a short interval of time, that the naval force of the New England States were organized along similar lines for the national defense.

The opening in the navy of the United States, thus offered to the profession, took place at a time when naval warfare was a much more advanced art, and the position of naval surgeons was comparatively assured and important. Nevertheless, the status of our early predecessors was equivocal, their accommodation a concession, a courtesy, a makeshift, and their equipment provided by themselves, so that if may be readily understood that the character and quality and quantity varied materially. Indeed, as late as 1798 the regulations prescribed that "a convenient place be set apart for sick or hurt men, to which they are to be removed, with their hammocks and bedding, when the surgeon shall advise the same, and some of the crew appointed to attend them." But, in spite of all, they accomplished a great deal of splendid work, and needed not to hide behind excuses then nor do they need the support of a patronizing charity which we might be tempted to bestow now in the light of present knowledge. The official and historical records are rife with laudatory and honorable mention of naval medical officers, which go far to express the praiseworthy services and high traditions of the corps. The memory of Joseph Harrison, medical officer of the first American man-o'-war, the "Alfred"; of Ezra Green, surgeon of the Continental sloop of war, the "Ranger," in her memorable fight with the "Drake"; Lawrence Brooks, surgeon of the famous "Bonnie Homme Richard," in her fight with the "Seraphis," and so on through a long list in the Revolutionary period and in the war of 1812.

"During the Civil War, which was largely fought on land, the naval surgeons were chiefly occupied with the illness occurring on vessels of the great blockading squadron," but in the naval actions at New Orleans, Mobile, off the coast of France, in the naval attack on Fort Fisher and elsewhere the surgeons of the navy, among whom the name of William Longshaw stands out in relief, discharged their duties with commendatory zeal, skill and heroic disregard of self.

So it has been since that great struggle up to the present time, whether in the ordinary events of naval life or in emergency, great or small, at sea, at home and on foreign shores, the medical profession has had innumerable representatives among those who played a prominent part, and all furnish brilliant examples which attest their ability, bravery and faithfulness.

The decade which succeeded the return of peace to the country in 1865 was marked by a large accession to the medical corps ranks (no State furnishing a larger quota than Virginia), and during the time which has since elapsed its strength has progressively developed. As the navy increased and alternations in the size and structure of ships of war were made the necessity for the attendance of surgeons grew in proportion, and gradually the medical establishment has evolved under one head, an organized unit, with an ever-increasing high standard of efficiency in the personnel and a continual improvement in material provisions. To-day our hospitals and dispensary facilities, at home and abroad, either do, or are being made to, conform in

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every detail to the most modern requirements for the successful care of the sick and injured; a sanitarium for the care of the tubercular sick of the navy has been established at Las Animas, Colorado, and is proving, in its rapid growth, to be a most valuable institution; schools for the training of our male nurses (members of the hospital corps) and for the preparation of our young medical officers for naval service have been established, and are being rapidly developed; a corps of female nurses has been authorized by Congress; a quarterly medical bulletin is being issued by the bureau for the timely publication of the many excellent and valuable special reports and papers sent in from stations and ships by naval medical officers, and for the convenient distribution of such information as is deemed of importance to the representatives of the medical department in the performance of their duties, with the ultimate object that they shall continue to advance in proficiency in respect to all of their responsibilities and that the physical welfare of the naval personnel shall be maintained; the sick quarters on board battleships of the various classes are completely equipped in accordance with the latest accepted ideas in medical science, including the necessary appliances and devices for diagnostic precision, surgical technique and therapeutic methods; and, last in the enumeration of important accomplishments, the hospital ship has been officially acknowledged as a necessary provision in the proper care at sea of those who succumb to diseases or are the victims of injury while rendering service to their country.

Our first hospital ship in time of peace, the U. S. S. "Relief," was commissioned on February 6, 1908, and since entering active service she has fully justified her existence as an integral part of the big fleet, and has performed her duties without friction and to the great satisfaction of all interested. Even many, if not all, of the antagonists of the innovation have been disarmed, and in this, our virgin experience with a floating hospital in time of peace, opportunity is given to prove the worth of such a provision before the world, to work out the details of its relation to the fleet and to establish its position in peace and war.

Much has been done to place the medical establishment of the navy, in every particular, on a high plane, and there is now great reason to be proud of its attainments; but we are ambitious, not only that there shall be no backward step, but that progress shall mark the years until the profession as represented in the navy has reached a plane as near perfection as possible, and there keeps pace with all the advances of medical science and adapts them to its uses under naval conditions.

The battleship of to-day is a fighting machine, and the allowed spaces for sick purposes are not utilizable in time of naval action, owing to insufficient space and lack of protection. Our principal means of meeting reasonable humanitarian demands and of fulfilling the expectations of a sovereign people, that those who fall during peace or war in service at sea to protect the honor of the nation shall be properly cared for, are hospital ships, offering every comfort and facility of well-appointed hospitals ashore; and it is being strongly urged that every fleet of over 10,000 men should have at least one vessel entirely devoted to hospital work, flying the Red Cross flag, and complying in every respect with the terms of the Geneva convention and those of The Hague conference. This will make it possible to give reality to the law of civilized warfare—that no unnecessary suffering shall be caused or permitted. The world-wide extent and earnest character of popular interest and activity in all that concerns the physical and moral well-being of mankind is an expression of that beneficial philanthropic public opinion in which the government services are participating and by which they are being influenced consciously or unconsciously, as was exemplified by the action of Admiral Evans in diverting two ships of the fleet under his command in an effort to save the lives of a few seriously sick men.

As a consequence of the lesson which the medical profession has finally been able to bring home to the lay public, far and wide, by patient, persistent iteration and reiteration, and finally by a proffer of association in the knowledge of the great truths which are daily coming to light, mankind is happily developing an individual and collective health conscience. There is a cry on all sides for schools of sanitary science and public health, and the leading argument for such educational institutions, from which dependable informa-

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tion may emanate and be distributed, bears upon the economic phase. A realization of the importance of enlightenment along the line of right living and obedience to the laws of health and the dictates of effective sanitation is growing, and the peoples of the world are becoming more and more eager to learn. Indeed, the branches of medical science have developed to such proportions that the profession is no longer able to work single-handed, but needs the intelligent understanding and sympathetic support of everyone. In no walk of life is this more true than in the military and naval establishment, where so much that makes for efficiency depends upon the power and the honest, wise and unflagging employment of preventive measures. We in the navy, like our colleagues in other public services, are doing all in our power to make the achievements in sanitary science the property of all, and to reap for the service and country the benefits of a concerted observance of its teachings and a common interest in the well-being of the whole public service personnel, to the end that preparedness for emergency may be based upon the solid foundation of physical soundness.

The range of practice which falls to the lot of the naval surgeons is almost unlimited, for it would be difficult to mention a disease or surgical condition, either acute or chronic, among the land forces or in busy manufacturing communities which is not duplicated under their eyes. It must be remembered that in modern fighting ships, with their extensive and complicated machinery and devices for crushing an enemy, the list of trades and arts represented is large. Add to the inseparable dangers of these divers special occupations those of the life and environs and duties common to all, and the wonder is that the per cent. of accidents is not greater.

The profession of the naval surgeon is certainly a broad one, and requires the same extent of scientific knowledge as is required elsewhere, if, indeed, not broader. He has not the same easy recourse to consultation which the army or civilian doctor enjoys. He is so frequently isolated from that comforting possibility, that he must be entirely self-reliant and ready to shoulder all responsibility, no matter what the emergency he is called upon to meet.

The medical corps of the navy, broadly speaking, is representative of the medical profession in every State of the Union and of the majority of first-class medical schools. The number from each, of course, varies, but each has reason to feel content with the character of work done and the part played by its contingent in this branch of naval service. In this organized body of medical men, on the one hand, there are comparatively few who have not acquitted themselves with honor and entire credit to their alma mater and their profession, and on the other hand there are many who stand out in relief as having a record for something more than simply duty well done. Space does not admit the enumeration of these, among whom we find brilliant instances of heroic devotion to duty, to country and to humanity and records of work in the advancement of the sciences.

It should, perhaps, be sufficient to have made these general comments, but in addressing an association of this State I feel called upon to make some special reference to the Virginians and graduates of Virginia institutions representing the medical profession in the navy. Of all sources from which we recruit the medical ranks of the navy this great State, particularly through its splendid University, the first of its kind in the South, and founded by that illustrious statesman, Thomas Jefferson, contributes a vastly larger number of young men than does any other one. Since the year 1870 a total of one hundred and five Virginians or graduates of the University of Virginia have entered the corps. This fact, in part, evidences a continuation of that large place which our citizens have always taken in honorable public life, and, in view of the proud history of Virginia through all the years from its colonial inception, it would be strange, indeed, if its sons lost sight of the exemplar in their heritage and failed to conduct their careers, if need be, as the brave Ambler did, with a balance to the glory of the State and the nation.

In conclusion, I wish to say that in the early part of my administration of the Bureau of the Medicine and Surgery of the Navy I realized that it would be impossible to recruit the medical ranks from the class of men, so necessary to the service, unless the corps enjoyed the same consideration shown other branches of the navy. Moreover, it was not tolerable that a body of educated men, such as the Medical Corps of the United States Navy, should

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be obliged to serve the government under the conditions which constitute a belittlement tantamount to a degradation of the individual and the whole profession, and every effort was made to bring about a more self-respecting state of affairs in the navy, and one which would be in entire accord with the position of dignity and importance which the profession has occupied throughout the ages of the world over. You may rest assured that to-day the status of the medical officer in the navy, in his relation to the rest of the service, is established on a high plane, and that little is to be desired in this regard. He is vested with proper authority, receives unstinted praise and admiration as in civil life, wherever and whenever merited, and fills a position socially, professionally and officially, which I am sure ,will meet with your approval.

I now wish to thank you gentlemen of the State Medical Society of Virginia for this opportunity of placing before you the status of the naval medical officer of to-day in relation to that of our brethren in civil life and the naval service.

SOME INSECT-BORNE DISEASES.

By GEORGE N. COLLINS, M. D., Fort Monroe, Va.,

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In the advances in our knowledge of the spread of disease, and consequently our knowledge of methods of its prevention, no more important work and no work of any farther reaching benefit to mankind has been accomplished than that done in the investigation of certain insect-borne diseases. It is needless more than to mention as evidences of this fact the practical extinction of yellow fever in the West Indies and Central America, with its tremendous portent to the future of the human race and the enormous saving of life, particularly in military service, due to our knowldge of the spread of typhoid fever and malaria by insects. Fortunately, stimulated by the memorable work of such men as Ross and Reed, investigations regarding the part performed by insects in transmitting disease are daily being pursued with increasing enthusiasm, and new and important facts are being constantly added to our store of knowledge of this most important branch of medicine.

An hypothetical relationship between insects—the term being used loosely to include the arthropoda in general—and the spread of disease has been considered by writers of all times, but no particular importance was given the idea until recent years. The idea that insects transmit certain specific bacteria has been held almost from the beginning of our knowledge of bacteriology. But that insects are responsible for the spread of parasitic animal organisms causative of disease has been scientifically investigated and dfinitely proven, but comparatively recently.

Serious attention to the relationship between insects and the spread of specific bacteria of disease was first given in the early "nineties," when attention was called to the agency of flies in the spread of *cholera.* Investigations showed that the intestinal contents and the excreta of flies fed on cultures of the cholera bacillus or fed upon the discharges of cholera patients contained virulent cholera bacilli as late as four days after the experimental feeding. In fact, so far as could be judged, the bacilli, far from being destroyed by the secretions of the alimentary tract, seemed rather to have multiplied in the flies' intestines. Cholera-infected flies allowed to drink from sterile milk, which was thereupon kept at 70° for sixteen hours, were found so to infect the milk that it was swarming with these dangerous bacilli.

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The averages of *typhoid fever* in camp life among the British troops in South Africa and in our own military camps in the South during the Spanish war stimulated investigations, which led to an appreciation of the important part played by insects in the spread of typhoid fever. It was found that flies, by their excursions between dejecta in the sinks and food on the mess tables and in kitchens, constantly spread the infection. In more recent years certain investigators have turned their attention to *vermin* collected from the bodies of persons suffering from typhoid fever, and have reported having found the typhoid bacillus in 75% of the lice so examined. But whether typhoid is actually transmitted by this agency is doubtful.

It is now believed that flies may spread *anthrax*. After feeding upon bodies of animals dead of this disease, the fly may be crushed while biting a human being, and the wound thus infected with anthrax bacilli.

Our knowledge of the methods of transmission of *plague* is constantly increasing. At the present it may be said that, while it is believed that the *pneumonic form* of plague is contracted by inhalation, the *septicemic form* is supposed to be contracted by way of the intestinal tract from eating food contaminated with the bacillus pestis, this contamination being often caused by infected flies and possibly by ants, for the bacilli have often been demonstrated in the intestines of infected flies, and the same is true of ants which have reecntly fed upon rats dead of plague. In these ants the bacilli have been demonstrated both in intestinal contents and in their dejecta.

But it is believed that plague is *most often* spread in the form most commonly met with—that is, the *bubonic form;* and here again the importance of insects as disseminators of disease is evident. Plague is primarily a disease of rats. and its existence is dependent upon the persistence of rats about human habitations. A plague-infected rat dies; the rat fleas desert the body, and, remaining in cracks and crannies about the house, and finding themselves facing starvation, they seek a new host, which may be a human being. In biting, the flea has a nasty habit of squirting blood from the intestine while sucking blood. The flea bite being irritating, is often scratched and the discharged contents of the insect's intestine, now abundantly proved to contain the bacillus pestis, is rubbed into the wound caused by the flea in the act of biting.

Recent work made it very probable that insects are the most important agents in the spread of *relapsing fever*. Various investigators have credited fleas, bed-bugs and lice with transmitting the disease. Examination of lice from patients suffering with this disease have shown the spirochetaæ multiplying in the stomach, and spirochetæ have been found abundantly in the secretion expressed from the mouths of such infected vermin. It seems probable that the disease is contracted by scratching the bites of infected lice and so rubbing in the wound spirochetæ from the dejecta and buccal secretion.

Experiments with flies have shown that they may, by their excursions between sputum and food, contaminate food with *tuberculosis*. Virulent tubercle bacilli have been repeatedly found in the intestinal contents and in the dejecta of flies fed on sputum from phthisical patients. Flies so fed may pollute food both by their excretions and by contact of their feet with the food. More recent investigations indicte that bed-bugs having bitten a tuberculous patient, may infect a second victim, the bed-bug being crushed while biting the second victim, and the wound scratched by the person bitten and so infected.

The predilection of the *tetanus bacillus* for the intestine of the horse and other animals as an abode and favorable location for multiplication has long been familiar. Lately attention has been directed not only to the most extraordinary resistence of tetanus spores, but also to the putrefactive qualities of this bacillus, and to the fact that it is thus very attractive to the house fly, which very probably is a means of disseminating the organism and causing the disease. In this connection, too, it may be mentioned that various writers have dwelt on the probability of flies disseminating *conjunctival diseases* and certain *exanthemata*, and some have stated that *leprosy* may be spread by flies. It is, of course, self-evident that flies may be responsible for the dissemination of various *pyogenic bacteria*.

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Turning now to the rôle played by insects in the dissemintion of *diseases due to parasitic organisms belonging to the animal kingdom*, it may be said that the phenomenon has been most thoroughly demonstrated in the various forms of *malaria*. It will be remembered that malaria is caused by a parasite, an hæmamœba, belonging to the lowest order of the animal kingdom, the protozoa. The definitive host of this parasite is certain mosquitoes of the genus anopheles, the intermediary host man, and in the course of its development the parasite undergoes a sexual cycle in the mosquito and an asexual cycle in man.

In man the minute parasite invades the red blood corpuscles, develops at their expense with the production of pigment, and, having divided into spores, becomes free in the blood and ready for another endogenous asexual cycle. The liberation of these spores being coincident with the malarial chill, it has been assumed that some toxin is liberated with the spores, and, depending upon the periodicity of the sporulation, we have the periodicity of the fever noted in malaria, and, depending on the spacing of sporulation and the number of groups of parasites—tertian, quartan and quotidian types of fever.

After a number of generations of these asexual forms, male and female parasites, homologous with spermatozoa and ova, appear, which are incapable of further multiplication within man, but which, when ingested in the act of blood sucking by certain species of the anopheles mosquito, unite in the stomach of the insect, penetrate its wall, develop, and, dividing into sporozoites, burst into the body cavity and thereupon invade the veneno-salivary gland, where they remain until inoculated into the next human being bitten by the mosquito. About ten days is required for this sexual cycle.

Mosquitoes (culicidæ) are well-nigh ubiquitous. They extend from the frigid zones to the equator. They live upon the juices of fruits, and only the females suck the blood of other organisms. When impregnated the female lays her eggs singly or in boat-shaped masses upon the surface of still fresh or brackish water. Temperature conditions being favorable, the larvæ hatch in two or three days and lie at the surface in order to breathe, the position assumed depending upon the genus of mosquito. Becoming a pura, the organism ceases to feed, and in a day or two more the pupa case bursts and the adult insect or imago emerges. At ordinary summer temperature this development from egg to imago consumes, approximately, in the malaria-bearing genus anopheles, twenty-five days; in the harmless culex, fifteen days, and in stegomya, the bearer of yellow fever, eleven days.

In winter the adults hibernate in dark-sheltered nooks. Their larvæ, too, may survive a winter, and the eggs are known to be able to survive freezing. Mosquitoes in general are weak and timid flyers, rarely straying far from their native pool of their own volition, and rarely rising far from the ground. The anopheles is a particularly weak flyer. But carried by winds mosquitoes may travel long distances; certain observers have even reported that mosquitoes have invaded ships ten miles from shore.

In this country we have twenty-four species of mosquitoes, representing nine genera. Most of them belong to the genus culex, and so far as known are harmless. There are three species of the malaria-bearing anopheles, and, lastly, stegomya callopus, which has been proved to spread yellow fever.

In general, the anopheles is not, as is stegomya, a domestic mosquito. The anopheles prefers to breed in small natural puddles and ponds of still water, in fields and swamps. On the other hand, stegomya, the disseminator of yellow fever, more commonly breeds in the populous centers, and prefers little collections of water about houses and yards in which to lay its eggs. In a general way, too, the anopheles may be distinguished from stegomya by the fact that in anopheles the axes of the proboscis head and thorax are in line with each other, whereas in stegomya the head and proboscis lie at an angle to the thorax. Therefore, while anopheles somewhat resembles a brad awl, stegomya resembles a hunchback. In the act of sucking blood the anopheles gives the impression that it is trying to stand upon its head. Again, the larvæ of the anopheles, when breathing at the surface of the water, lie nearly horizontally, whereas the larvæ of stegomya hang at an angle with the surface.

Among the many interesting peculiarities of mosquitoes it has been noted that mosquitoes of the genus anopheles, and possibly others, show a varying

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predilection for alighting on certain colors. Navy blue attracts them most and orange and white least; an advantage of this fact may be taken in choosing clothing in localities where mosquitoes are troublesome. The odor of the African has been proved to attract mosquitoes more than does the odor of the white man.

Whereas it has been proved that two factors are essential for the spread of malaria, the parasite in human blood and the anopheles mosquito, it is known that certain countries, formerly highly malarious and still presenting these two factors, are now no longer malarious, although the inhabitants have been proved not immune to malaria. In such instances it is probable that the malaria parasites, being living organisms and necessarily competing for existence and liable to be crushed out by other organisms in the struggle, have been preyed upon and rendered extinct by some natural enemy.

Next to malaria the part played by mosquitoes in spreading disease has been most conclusively demonstrated in *filariasis*, which has been proved to be disseminated by a number of species of culex and anopheles, the metamorphosis in the mosquito requiring about seventeen days. It will be remembered that in filariasis, the parent worm, a hair-like nematode, about three inches long, occupies a dilatation in some lymphatic channel, whereas myriads of minute embryos infest the peripheral blood while the patient sleeps, and the larger arteries and lungs while the patient is awake. Being ingested by a mosquito, the embryos escape from their sheaths in the insect's stomach and penetrate the wall. The metamorphosed worm thereupon makes its way to the mosquito's proboscis, enters the wound made when the insect bites a human being, and thereupon, having established itself in some lymphatic channel with a worm of the opposite sex, reaches maturity and breeds other embryos.

Recently *dengue* has apparently been experimentally transferred by allowing a mosquito to bite first a patient suffering from dengue and then a man in health in a non-infected country. It is claimed that an amœboid parasite has been found in the red blood corpuscles, showing cyclic development and flagelated forms.

It is now believed that a fly, very similar to the ordinary house fly, spreads that terrible disease, *African Lethargy* or *Sleeping Sickness*. For sometime past the pathological manifestations of this disease—essentially an extensive meningo-encephalitis, with infiltration of blood vessels of brain and cord with leucocytes—have been known. But only recently has it been demonstrated that the blood of patients suffering from this dread disease is swarming with minute unicellular motile animal parasites known as *trypanosomes*, and that these organisms are introduced by a biting fly. It is believed that the parasite completes a sexual cycle in the fly before the latter can infect a new intermediary host, just as the malaria parasite completes its sexual cycle in the mosquito.

Considering now the *prevention of insect-borne diseases*, three agents—cleanliness, mosquito netting and insecticides—are yearly becoming recognized as of more importance in this branch of preventive medicine. Cleanliness, for instance, implies to the sanitarian, the removal and destruction of collections of such organic matter as insects may breed in. House flies, we now know, deposit ova not only in horse manure, but in human excrement as well, and very probably in countless varieties of organic matter, and one obvious method of lessening the numbers of these dangerous pests is the removal of collections of organic matter where flies may breed. Where removal of these collections is impracticable the flies may be kept away by proper screening, or their breeding prevented by chemical treatment of the organic deposits.

The use of mosquito netting to prevent insects becoming infected by reaching and biting infected individuals and in preventing insects once infected from reaching and biting other human beings need hardly be mentioned, as it is now in such common use. Netting is also important in preventing insects contaminated by contact with infected discharges from reaching and mechanically infecting human food. Therefore, not only should dejecta be destroyed, rendered inocuous by chemicals, or, if this is impossible, screened, but such food as must be necessarily exposed should be screened from ingress

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of insects. And the same holds true in regard to such collections of water wherein mosquitos may deposit eggs and which cannot be boiled.

Turning now to such articles as are used as insecticides, it may be said that arsenic has practically supplanted all other substances as a food poison for biting insects. It is used as Paris green and London purple. Petroleum applied at the rate of one ounce to fifteen square feet of water is used to destroy all forms of aquatic insect life, including the larvæ of mosquitoes and the adult females coming to lay their eggs. Bisulphide of carbon evaporated in a sealed room destroys vermin. But it is dangerously inflammable and explosive and deadly to higher forms of life.

Pyrethrum powder is used as a powder or burned. It is not very powerful. Against mosquitoes it is burned in a sealed room, and although it kills many, some mosquitoes are only stupefied. Five pounds for each one thousand cubic feet of air space should be used when the powder is burned for this purpose.

Sulphur is undoubtedly the most valuable insecticide we possess and has no superior in destroying contagion spread by vermin. As sulphur dioxide it kills mosquitoes in one hour, rats in two hours. As an insecticide it is as powerful dry as wet, and, contrary to formaldehyde, it has surprising powers of penetrating clothing and fabrics, killing mosquitoes even when hidden under eight layers of towelling in one hour, and that, too, when used in very dilute proportions. Sulphur dioxide bleaches coloring matters, attacks metals and weakens the tensile strength of cotton and linen fabrics owing to its forming sulphuric acid. One pound of sulphur burned in one thousand cubic feet of air space gives one per cent. strength. Burning it in pots is the easiest, cheapest and most efficient method. The pots should be placed well above the floor and ignited by first pouring in alcohol and then throwing in a lighted match. Liquid sulphur dioxide in tubes may be used where there is danger of fire, but it is expensive. Sulphur furnaces have little to recommend them.

Formaldehyde gas, while holding the front rank as a germicide, is a feeble insecticide. In the strength prescribed for bacterial disinfection (ten ounces of formalin per one thousand cubic feet of air space for six hours), it will kill mosquitoes if brought in direct contact with the insect, but this is difficult to do, as the mosquitoes hide in folds of bedding, draperies and such articles, where the gas does not penetrate in sufficient strength to kill them. Therefore, to use this gas successfully to kill mosquitoes, the room must be tightly sealed, a large volume of gas must be liberated quickly and the room must be free from places where mosquitoes may successfully seek refuge.

Hydrocyanic acid gas, used much in greenhouses for destruction of insect pests, is used sometimes in granaries and barns and other uninhabited buildings for the destruction of vermin. Its employment is attended with so much danger to human life that its use is impracticable about dwellings.

DISCUSSION.

DR. P. B. BARBINGER, *Blacksburg:* About two years ago I noticed that as soon as the sun went down every mosquito in the room went to the window. This is true of the six or seven representatives of the culex which I have had the opportunity to observe. I do not know as to others. Bear in mind that the mosquito bites a malarial patient, goes to the ceiling and takes his rest, subsequently to descend when hungry and bite again, and so continues for eight, ten, twelve or more days, during which those internal changes take place that make him most toxic. If, then, you have some means of killing every mosquito in the room when toxic or otherwise, you have attained no small point in the destruction of this carrier. They will not go to the sunny side of this room, but if you have two windows, put down the shade on the side next to the sun and leave the northern light, and in ten minutes every mosquito will be on the glass or wire, and you can kill them. I would ask further investigation regardless of the type of mosquito.

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TYPHOID BACILLUS CARRIERS.

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It is only in recent years that we have begun to appreciate the fact that a typhoid patient may be a source of danger to the community for years after recovery from the disease.

Many times when we have been unable to trace the source of infection to milk or water or to unhygienic conditions about the premises, some person, maybe the physician himself, is quietly spreading the disease. Persons in apparent health are often a source of danger.

The epidemic of cholera now in St. Petersburg, Russia, reminds us that the cholera vibrio is carried in the intestinal tract of a healthy person, and were it not for the fact that the diphtheria bacillus is carried in the throats of healthy people, diphtheria would not be so common.

It is now well established that a similar relation exists in the case of man and the typhoid bacillus.

In 1899, Richardson[1] reported a case in which a man returned to Johns Hopkins Hospital five years after an attack of typhoid fever. He was found to have typhoid cystitis and a pure culture of typhoid bacili was secured from his urine.

Typhoid bacilli may persist in the feces even longer than in the urine and thus be a source of danger for many years.

Kayser,[2] in 1906, reported a most interesting case: "A woman about forty years of age had an attack of typhoid fever when she was ten years old, subsequent to which she suffered from jaundice. Five years previous to coming under observation she had been suffering from attacks of gall-stone colic. Fecal examinations November 24, 1904, and repeatedly since (thirty years after the attack of typhoid) showed the persistent presence of typhoid bacilli. Her blood test, January, 1905, gave a positive Widal. In 1904, two cases of typhoid occurred in her family in which no other source of infection could be found. Two other cases occurred in neighbors with whom she had business dealings."

G. Dean[3] reported one case in which typhoid bacilli were found in a man's feces 29 years after an attack of typhoid fever. Lentz[4] reported one case in which typhoid bacilli were found in the feces 42 years after an attack of tyhpoid fever. Momose[5] reported an epidemic of typhoid on a Japanese man-of-war in which two healthy men served as carriers. The epidemic was arrested by isolation of the two carriers and the use of preventive serum for the rest of the crew. A. Ledingham and J. C. G. Ledingham[6] report a succession of outbreaks in a Scottish lunatic asylum. Out of 90 females examined three typhoid carriers were found. Grimme[7] reports a similar case in an insane asylum in Germany.

The assembling together of a large body of men, as in the Spanish-American war, is a signal for typhoid outbreaks, and recent work points to the chronic carriers as the most important cause of such epidemics. Dr. L. A. La Garde,[8] U. S. A., reports an epidemic traced to contact infection by chronic carriers. O. Busse[9] has called attention to the fact that typhoid bacilli are found in the blood of healthy people who have never had typhoid fever.

1. Richardson: Jour. Exper. Med., 1899, Vol. I.
2. Kayser: Hygienic Lab. Bulletin, No. 35, p. 168.
3. Dean: Brit. Med. Jour., March 7, 1908.
4. Lentz: Klin. Jahrb., 1905, Vol. XIV, p. 475.
5. Momose: Sei-i-kwai Med. Jour., Tokyo, Dec. 12, 1907.
6. Ledingham: Brit. Med. Jour., London, January 4, 1908.
7. Grimme: Munchener Med., Wochenschr., Jan. 7, 1908.
8. La Garde: Military Surgeon, Carlisle, May, 1908.
9. O. Busse: Military Surgeon, Carlisle, May, 1908.

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Drigalski and Conradi[10] isolated typhoid bacili from the blood of four persons who showed no symptoms of any kind, but had been in close contact with typhoid cases.

Contact infection brings up the question of the longevity of typhoid bacilli outside of the human body. Much evidence has been produced to show that the typhoid bacilli can live for weeks and months outside the human body. In this connection Parkes[11] cites a most interesting case which shows that typhoid bacilli may remain virulent on blankets for six months. "Some blankets which were last used in South Africa were sold without having been cleaned. A number of this lot found their way to the train-ship Cornwall in the Thames. An outbreak of typhoid occurred on the ship. Some of the blankets from the lot received were examined bacteriologically and typhoid bacilli were found to be present."

Typhoid bacilli have been found to live on linen[12] many months, and, dried on thread, the bacilli have kept alive nearly one year. In England a yeoman[13] having had typhoid fever, returned from South Africa, and he infected a well causing twelve cases.

The following case came under my observation recently: Three cases of typhoid fever appeared in one family at the same time. The home was a model of cleanliness and none of the household had ever had typhoid fever. A careful search as to the cause seemed for a time to show no reason for the sudden outbreak. The health department took up the inquiry and investigation showed that the family had recently employed a servant who had had typhoid fever two years ago. This servant had left one family where she had caused one case of typhoid before infecting the second family. The two families were several miles apart, and no one, without investigating, would have suspected that the source of infection of the two families was the same. Of the four cases caused by this carrier one died. This servant cost one family over $600.00. The question is, what shall be done with this woman? Is she not as dangerous as a smallpox patient free in the community?

The well-known case of Dr. S. H. Park[14] is worth repeating. "A cook was brought to the Research Laboratory, New York City, to have the feces and urine examined. In the past eight years she had been employed by eight families. In seven of these families typhoid fever broke out. In all, twenty-six cases occurred and there was one death. Being a menace to life, the cook was detained by the department of health and she has now been detained for more than eighteen months. Treatment has been of no avail. The feces still contain typhoid bacilli in large numbers, though she has taken as much as 150 grains of hexamethylenamin daily. The woman denies that she has ever had typhoid fever."

Contact infection is certainly one of the very important means of conveying typhoid.

The frequency with which trained nurses become infected constantly bears evidence of this.

A physician should carry antiseptic tablets and wash his hands in antiseptic solution after examining any case of fever which he suspects to be typhoid. If he does not take this precaution he may become infected or he may become a chronic typhoid bacillus carrier.

DISCUSSION.

Dr. John Staige Davis, *University:* The ingenuity of the typhoid germ has been taxed to find a way of getting in. First it was the water, then milk, food, flies, and now the fingers, especially of servants and cooks. The time will come when a cook who has had typhoid fever will be an object of suspicion. Some experiments were made, and I think published, last year by Dr. Pratt, in Boston, showing that the contents of the alimentary canal contain a great many more typhoid bacilli in the jejunum than at the ileo-cecal valve,

10. Hygienic Lab. Bulletin, No. 35, p. 189.
11. Parkes: Practioner, London, LXXI, 1903, p. 297.
12. Stimson: Hygienic Lab. Bulletin, No. 35, p. 187.
13. Walker: Brit. Med. Jour., 1900, Vol. 2, p. 1494.
14. Park: Jour. Am. Med. Asso., March 7, 1908, p. 981.

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and in both of these locations more than in the rectum, showing that a large number perish en route. The breeding place is the gall-bladder, and our task is to find some efficient disinfectant for that.

One method of carrying the germ which Dr. Grinnan did not mention is the clinical thermometer. in many cases it is carried around with only an ordinary washing from one patient to another. All typhoid patients should have their own thermometer, but where they do not, I would suggest keeping a formaldehyde solution in the case, and keeping that changed every day.

TYPHOID FEVER—IMPORTANCE OF EARLY DIAGNOSIS—FASTING—SPECIAL DIET—SURGICAL REST OF BOWEL—AND SIMPLICITY OF TREATMENT.

By A. J. BURKHOLDER, M. D., Mt. Sidney, Va.

This disease has a very interesting history, and was for several centuries confused with typhus fever. Ancient writers describe in part what we recognize as typhoid; but to a physician of this country justly belongs the distinction of first differentiating and setting forth clinically and pathologically this fever as a separate and distinct disease. From American sources even to-day we are able to study this disease with greater satisfaction than from foreign observers.

The time allotted will not permit of a discussion of the complex manifestations and types of infection, modes of entrance, systemic effesct and complications. Therefore we will confine this brief to the consideration of a few points found in the sick room—leaving those winged questions until our æroplane is sufficient therefor.

With the advancement of medical science we are able to delve into the depths of mystery, defy disease by immunization and anti-toxin. Yet we must not forget that many of these valuable agents are only in their infancy of development, and many of the valuable tests employed in diagnosis are not infallible, are confirmatory if positive, and, if negative, in no wise prove that disease does not exist. The time has not yet arrived, and never will, when we can in our laboratory diagnose the patient. That is what we propose to treat; therefore "let's come down." With the advancement of our profession, there is a growing tendency to wander away from convictions of bedside study. Yet what evidence has been produced to show that the clinical conclusions of eighty-five years ago should be displaced by the observations of to-day? The long-tail coat, the solemn face, the silent tread, the modulated tone, the lancet and depleting measures have gone, and with them the impression plate, bedside diagnosis. The clinical picture of typhoid fever as drawn by Chapman, by Wood, and by Thompson eighty-odd years ago stands as a living monument to-day to those profound students; and when compared with our most recent writings, those not yet dry from the printer's ink, they define clearly in every line those diagnostic symptoms observed at the bedside, upon which alone they depended.

We would here enter a plea for a close clinical study of disease, especially typhoid fever; for upon an early diagnosis, immediate in many cases, depends the life of the patient.

Even where the least suspicion exists it should be regarded typhoid and treated as such until you go and develop your cultures, search through available literature, and make several mathematical calculations as to possibilities. These means of diagnosis are to our credit. Yet let us not forget that too often valuable time is lost. The life of the patient and our success demands that we act then and there—no future time offered. To do this requires a

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higher degree of trained powers of observation; and such should be our aim, our first and main dependence.

Years ago, and so it is to-day universally admitted that the food factor is one of the most important questions to be solved. Every writer and every practitioner holds to his own belief, however, all with varying degrees of success—many claiming that in the event such diet produces disorder it should be withdrawn. The most natural question suggested by that direction is this: by withdrawing the offending agent, can you also always withdraw the evil effect produced? If such diet is competent to produce disorders, is it rational to employ it in a single case? or withdraw it after the stomach rebels, after the crippled bowel has been unduly excited, after mixed infection has been favored, after the toxic system has been borne down to the very brink of the grave by increased sepsis, after the vital forces have lost all power of resistance, after cell activity ceases from profound toxemia? And, we might add, after distention favors a long list of dangers.

That life-giving fluid that stands par excellence hermetically sealed, transposed by transfusion, possessing all the nutritive elements, the proximate principles, kind for kind, gives abundant evidence of its utility in its natural sphere. This connecting link that spans the chasm from darkness to light ceases to be food at a certain period. Nature so says. We will patiently await evidence to the contrary.

Let us leave off the milk and give beef bouillon; possibly we will grow a better culture.

In the administration of drugs we consider the physiological action, the therapeutical action, and the toxic action; and we are very careful to carefully guard the latter action. Why should we be indifferent in regard to other substances that likewise have indirect toxic effect? Pathologically the gravest lesions exist in the bowel; we all admit that we are in the presence of gastro-intestinal catarrh with hyperplasia, and that irritating food increases peristalsis, which increases absorption of toxins, and sepsis thus produced increases nitrogenous waste more rapidly than the typhoid toxin.

Therefore let us regard these cases from a surgical standpoint, and treat them as we would any other lesion of the viscera—rest, perfect rest, not only of every vital organ, but bowel rest. This means that nothing within nor anything from without should disturb the patient; even the very atmosphere he breathes should carry nothing but oxygen; not even one of those innocent lynx-eyed members of the winged fraternity should receive admittance to the sick chamber, for he is on no mission of mercy, neither when he goes forth does he bear good tidings. A quiet room and a nurse not afraid of work and possessing sufficient intelligence to realize that nursing consists in attending to directions given by the physician, are essential.

The following treatment has been employed by the writer in quite a number of cases without a single death, and only two complications, which, however, quickly made complete recoveries.

First visit.—If only suspicious of typhoid, mercurial purge, fasting 24 hours, water only allowed.

Second visit.—If digestive tract has been cleared, albumin water is allowed every two hours; if not, small dose of salts or oil is administred; fasting continued until laxative acts.

Third visit.—Albumin water continued. If symptoms produced by full bowel have subsided, liquid peptonoids are added to diet, either independent or alternating with albumin water. Intestinal antiseptic is now begun. My favorite is:

℞	Bismuth subgallate	
	Bismuth salicylate	ää 3ss
	Zinc sulphocarbolate	gr. iij
	Guaiacol	gr. iv

M. Make capsules 24.

Sig. 1 capsule every two to four hours—depending upon number of stools. Continued every four hours after diarrhœa ceases.

Fourth visit.—Tea and coffee added to diet, if desired.

Nourishment has been given only during the day up to this period, which after this is given once only from 10 P. M. to 5 or 6 A. M. Provided we are dealing with a strong patient, no stimulant is given. However, with the

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majority sulph. of strychnia is begun early and increased as required—the time of commencement and dosage being indicated by toxemia, which should be given at the time the antiseptic is given, and both at regular time for nourishment, in order that frequent administrations may be avoided.

All nourishment is iced, and the patient is encouraged to drink freely of water. Good results are often secured in this direction by offering a full glass through a glass tube at the time the medicine is administered.

The usual lemon flavor of albumin water may be displaced by a dash of nutmeg if desired.

No change is made in this diet unless patient rebels, until practically all acute abdominal symptoms subside—after which one to three raw eggs a day are allowed. Oatmeal gruel next is given. When the evening temperature becomes normal, a small piece of toasted sweet yeast bread may be allowed twice daily; fresh buttermilk from cream not over two days old given in quantities of one-fourth glass may be allowed with toast, or the yolk of a soft boiled egg is often preferred on the toast. At this period the albumin water is omitted; but the liquid peptonoids are continued at intervals between semi-solid or solid nourishment. Enforced use of bed pan during entire illness.

The cold pack is used for half hour every two hours during the day and up to 10 P. M., while temperature remains above 103; from 8 A. M. to 10 P. M., if over 101; after this, usually at 1, 4, 6 and 8 P. M. will be ample to insure a good night. Enemata are resorted to if required. A broken dose of mild chloride of mercury at bedtime is now frequently in order.

The ice cap is used in many cases, and is of especial advantage in children. In children the intestinal antiseptic is not usually required.

The patient is kept in bed until the evening temperature remains normal, until reasonable strength has been regained, until absolutely all symptoms of fever have disappeared. After this we may with comparative safety permit the patient to sit up a while every morning; and my rule is to allow him to find his way out after arriving at this stage. Tonics are usually given for several weeks.

In detailing this simple treatment, I do not mean to convey the idea that simply a mechanical rule is followed; but I am, on the other hand, fully convinced that more fever patients would recover if the doctor in charge possessed only such drugs as are clearly indicated to conserve the vital forces.

In this disease greater danger lies in the administration of medicine than in the disease itself. The deportment of the physician should inspire confidence, and little fluctuations necessarily met with should be silently watched; but not treated through fear; for generally by the next visit they will be different. The constant and frequent change of medicine does serious harm.

Complications demand appropriate treatment.

A PLEA FOR THE VIRGINIA CONSUMPTIVE.

By R. H. GARTHRIGHT, M. D., Vinton, Va.

We know that a ruinous disease is running rampant throughout the habitable globe, and that it has laid low in death more people than have all the wars named in history since the armies of the four kings joined battle with those of the five in the vale of Siddim. This loathsome malady thrusts its deadly fangs into the vitals of the inhabitants of every land and every clime. War slays its thousands, but tuberculosis its ten thousands!

To be gathered in the autumn of life "like a ripe shock of corn" with life's duty done, is "a consummation devoutly to be wished"; but the "reaper whose name is Death" is continuously swinging his keen and glittering scythe

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and gathering sheaves long before they are ready for the harvest Consumption respects no age or class, but most of its victims are the young—the hope of the State and nation—who are filled with the joys of living.

The average man has no conception of the magnitude of the slaughter wrought by the tubercular bacilli. He will open his eyes in wonder when we tell him that more than *eight millions* of the living to-day will die of tuberculosis; that in our own land there are one million sufferers from this disease; that in Virginia alone we have twenty thousand consumptives, with an annual death rate of five thousand, or fourteen deaths every day; that every hour and forty minutes, in every night and every day of every year, somebody within the confines of the Old Dominion dies of tuberculosis.

It is appalling! When a preventable and curable disease is allowed year after year to carry five thousand Virginians to the graveyards, it shows that something is radically wrong. Shall we permit the tubercular bacilli to invade and destroy our bodies, and thus demonstrate that they are still our superiors and conquerors? Must these infinitesimal but powerful and pestiferous organisms continue to prove mightier than we?

On the subject of successfully combatting this disease we need more light, but with the knowledge the profession posessses concerning tuberculosis to-day, *greater* things can, and should, be done for our people.

Because for centuries *doctors* thought tuberculosis non-contagious and incurable, and so taught the public, it should not surprise us that *people* hesitate to believe in and accept modern methods of prevention and treatment. Men are slow to appreciate new ideas. It is evident that the people as a whole have not grasped the fact that consumption is contagious, preventable, and in many instances curable.

To eradicate this fallacy from the public mind is one of the problems confronting us. The task of getting this matter before the public in such a way as to bear fruit will be no easy one, but the great body of earnest medical men who have begun the crusade against tuberculosis have no thought of failure. To elicit the interest of the public on a question with which it is only partially acquainted is a stupendous undertaking.

When an *individual* exposes himself to danger to rescue another, he is counted a hero, but when another individual endeavors to reform an evil that affects countless human lives, he will receive meagre support and encouragement from the masses. Ruskin expresses the idea forcibly when he says: "Human nature is kind and generous, but it is narrow and blind and can only with difficulty conceive anything but what it immediately sees and feels. People would instantly care for others as well as themselves, if only they could imagine others as well as themselves. Let a child fall into a river before the roughest man's eyes, he will usually do what he can to get it out, even at the risk to himself, and all the town will triumph in the saving of one little life. Let the same man be shown that hundreds of children are dying of fever for want of some sanitary measures which will cause trouble to urge, and he will make no effort, and probably all the town would resist him if he did."

Now, in order to wage a successful warfare against tuberculosis in the State we need first to *educate*, *convince*, *interest* and *enthuse* the people. Without their co-operation and support we cannot succeed.

How can the public be aroused into action?

By organization. The main factors to be used in perfecting the organization are *men* and *money*—men possessing special qualifications for the work, and money to pay them for spreading abroad the principles which, if observed, will give health and prosperity to the masses.

In this fight medical men should lead. In every hamlet and county, in every ward of every city, there should be a band of intelligent, active citizens, with a physician at its head to instruct and direct the movements. Let the doctor first convince the members of the local organization that consumption is preventable; then let these members go out among the people and tell them the cause of the disease and the methods of preventing its spread. Public lectures delivered by gifted and magnetic speakers, newspaper articles, and personal work are all indicated.

There are hundreds of important facts which the people need to learn on this subject, before we can expect the Legislature to appropriate the necessary funds.

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The present statute law relative to State's public health is a wonderful improvement over any laws hitherto enacted, but the $40,000 annually appropriated is not sufficient. True, with this amount much can be done toward preventing the spread of contagious diseases. Much is being done. The gentlemen who compose the present State Board of Health are vigorously pushing forward the work of preventive medicine, but their success would be tenfold greater were the adequate resources at their command.

The most prevalent of all the preventable diseases is tuberculosis. Would it not be wise, for a few years at least, to expend the major part of this appropriation in a campaign of education? When the people know the essential facts about tuberculosis, may we not hope they will demand of their representatives in the General Assembly the necessary funds to put into operation the methods of preventing the spread of the disease? It is known that the $40,000 comes practically out of the pockets of the Virginia physicians in the way of license taxes. If the doctors, a small percentage of the State's population, contribute this much, would it not be right and proper for the other taxpayers to *quadruple* this amount? Would they not count it a privilege to aid in the good work? Men have tried to figure in dollars and cents what would be saved to the State and country by preventing consumption, but in many instances they make the estimate entirely too small.

We are told that tuberculosis costs the State $60,000,000 annually. A yearly appropriation of one or two hundred thousand dollars seems formidable to the taxpayers at first thought, but if properly expended it would in large measure check the ravages of tuberculosis. Sanitaria could be established and maintained, suitable literature sent into every household, lives would be saved, wealth and comfort would take the place of poverty and distress, and the money appropriated, in due time, would return, *quadrupled*, into the coffers of the State.

Two hundred thousand dollars expended annually in this cause would doubtless reduce the death rate of tuberculosis at least fifty per cent., and this would happen quickly. From a business standpoint it would be wise to expend this amount or more in order to save thirty million dollars ($30,000,000).

While no specific for the "Great White Plague" has been discovered—while we are not as yet prepared to say to the very ill consumptive, "rise up and walk," we can show to those who under present conditions will contract the diseases to go down to their graves after months of weariness and suffering, how to avoid this experience, and for years enjoy the blessings of health.

Let us do all in our power to save our fellow Virginians from the consumptive's doom. The work is a stupendous one; barriers high and strong, beyond which lie an ocean of difficulty, confront us, but having "taken arms against this sea of troubles," let us by continuous and strenuous "opposing, *end them.*"

SOME PHASES OF TUBERCULOSIS IMPORTANT TO THE PUBLIC.

By CHARLES T. ST. CLAIR, M. D., Tazewell, Va.

The subject of tuberculosis has been before the profession for so long that I hesitate to present a paper to this society upon this question, except for the fact that it is my honest opinion, based upon careful observation, that the medical profession in this State is not awake to the grave conditions as they exist regarding this disease, and also that the people cannot be enlightened except through the medical profession; therefore, what I shall have to say is addressed to the physicians, and through them to the public.

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My remarks to you to-day are based mainly upon conditions as I have observed them in Southwest Virginia, and particularly in my home county, and I have good reason to believe that if conditions were carefully inquired into in most of the counties, cities and towns of the State, they will not be found very unlike those which I have in mind.

Of a population of twenty-five hundred in one community there are not less than one hundred and fifty cases of tuberculosis, and of twenty-five thousand people in that county there are not fewer than one thousand cases of the disease; think of it, one person in every twenty-five has consumption! I am sorry that I cannot give you other than estimates, but we have no figures (statistics) in this State. I have inquired of the physicians in my county as to the tuberculous conditions in their practice, and they all declare that tuberculosis is on the rapid increase. I find from inquiry and reading that the disease is widespread, and on the rapid increase throughout the State. Conservative estimate places the number of cases of tuberculosis in the State at thirty-five thousand, and the number of deaths from the disease each year at more than four thousand.

Tuberculosis is an old disease, but with its age it has gathered to itself great strength. It is the newest, the most alive, the most formidable foe with which we have to contend in Virginia to-day. It is, in my opinion, more important to the profession, and especially to the public of the State than any, and perhaps all other diseases combined. Because we and the public are alike widely awake to the dangers of such diseases as smallpox, typhoid fever, diphtheria, pneumonia, scarlet fever, and the like, we take the necessary precautions regarding them; but we fail to use ordinary common sense when we come to deal with this, the most prevalent and most formidable of them all.

Now, who knows that tuberculosis is widely prevalent in this State, and that it is on the rapid increase? When you go home, take the trouble to inquire of those outside the medical profession as to tuberculous conditions in your community; ask your preachers, they are generally interested in health conditions, ask your lawyers, your business men, your laymen, and I am sure that you will be surprised to find that not one of them is aware that the disease is prevalent in his community, and especially does he not know that each year, right around him, greater and greater numbers of his neighbors are falling victims to the disease.

I remember that less than ten years ago I saw a town in Virginia placarded with great, scarry smallpox cards, yellow flags were displayed, and all the approaches to the town were guarded by paid men, who carried shotguns, and so great were the smallpox demonstrations that a stranger coming to that town would have supposed that he had fallen into a veritable hotbed of the disease, but not so. This was all because there was an outbreak of smallpox fifteen miles away, when at that very time there were scores of persons walking the streets of that town distributing the deadly germs of consumption without let or hindrance. A layman becomes greatly alarmed if there is a case of diphtheria, scarlet fever, or typhoid in the neighborhood, but he will sit a half day listening to a court trial, which does not concern him, and inhale the germs of consumption, which are deadly, and which are being poured forth unstintingly by a dozen consumptives, without a thought of danger; and he will move an unsuspecting family into his tenement house lately vacated by the tuberculous, and he does this innocently. Why? Because he knows nothing of the dangers of this, the most dreadful, because it is the most fatal of all diseases with which we have to deal at least, and he is not afraid of it; but he is afraid of the typhoid, and the scarlet fever, and the diphtheria, and the smallpox, because the doctor has explained the danger to him.

Since the laity do not know of the dangers of this disease, since they do not know of the alarming prevalence of it, and of its rapid and necessary spread, under present management, and since the physicians are the ones and the only ones who do know these things, I wish to inquire, have we been doing our duty toward the public, whose custodians we are, and are we doing our duty now? Are we going to keep quiet as we have been doing? Do we propose to see the people sicken and die of this horrible and expensive disease, with all its suffering and woe, and not so much as lift a finger to save

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them from this preventable calamity? I say without fear of successful contradiction, that outside the largest centers of population, not a hand is turned, not a finger is lifted, to prevent the spread of tuberculosis. I am almost persuaded to say that there are not a half score of doctors outside of the cities who are seriously interested in tuberculosis.

Last winter the Legislature of Virginia did no more than its duty to the public, and not to the medical profession of the State, but to the people of Virginia, when it voted a handsome appropriation for the proper carrying on of the work of the Virginia Board of Health, and I cannot say too much in praise of the efficient work of this board, which is just begun, and I believe that under its intelligent head, the people of Virginia will get back much more in sensible health regulations than is represented by the amount which was appropriated. The Board of Health will not be able to accomplish by a great deal all it should in eradicating tuberculosis, however, unless the doctors of the State take a lively and intelligent interest in helping with the work. We cannot sit quietly down with folded hands and expect, because we have a Board of Health with forty thousand dollars, that tuberculosis will be legislated out of our midst. The Board of Health cannot know of the conditions in each community, and help them, unless the local physicians give the necessary information, and when the board knows of alarming conditions, it cannot hope to accomplish the desired results unaided by the local profession, because its time and means are necessarily limited. Therefore the doctors of each locality must take up the work and prosecute the fight.

Now I come to the question, how is this fight to be undertaken? How are we to lessen and limit the spread of tuberculosis? My answer is, education. First, let the profession be educated; let us apply what we already know, which we are not doing; and second, educate the people. Now, in speaking of the education of the profession, I mainly wish to call attention to two things, and to these in a brief manner, and only in so far as they apply to the proper elucidation of my proposition—namely, that the profession needs education; and I wish at once to disclaim any intention of undertaking to appear in the role of an expounder of some unheard of new theories regarding tuberculosis, but I merely wish to suggest a few points in early diagnosis and early treatment, which each one here doubtless already knows, but which, I believe, are seldom properly applied.

First of all, I think the profession should get away from that old idea, which many still have, that tuberculosis is necessarily a fatal malady. We may deny it as vigorously as we may, but it is too frequently true that the doctor throws up his hands in holy horror in the presence of this disease, and lets the poor unfortunate victim go to his sure death without an honest and intelligent effort to save him. Let the profession know that the vast majority of the tuberculous can be cured if properly diagnosed and properly treated. Good authorities put the percentage of cures under these conditions at not less than eighty.

As to early diagnosis, I would urge that we be continually on the lookout for the disease, for there is no disease whose final result depends so much upon early recognition and treatment as does tuberculosis.

When a patient is seen in whom there is reason to suspect tuberculosis, first of all a careful history of his family should be gotten; then a careful history of any previous illnesses which he may have had, and especially as to how he recovered from such illnesses, how much weight he lost, if an amount out of proportion to his sickness, and if he regained this weight promptly. Then inquiry should be made about his present condition; has he lost weight? if so, how much, and how long has he been losing weight? and have his strength and appetite failed? Compare his present general condition with his general condition when he was in health. Ascertain if this illness followed some other sickness, especially is it a sequel of la grippe. Note variations in temperature and pulse. Then examine the lungs carefully and repeatedly by the well known methods of physical diagnosis. Of course examine the sputum, if any, for the bacilli, and if the bacilli are found this is conclusive proof of the existence of the disease, but failure to find same does not necessarily negative the diagnosis. I believe that frequently valuable time is lost in trying to find some such positive proof of the existence of the disease.

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If your patient shows no other signs than those of loss of strength, loss of appetite, loss of flesh, an abnormal pulse and temperature, and especially a subnormal temperature in the mornings and a temperature above normal in the evenings, and you can find no other cause for his condition, you can safely make a diagnosis of tuberculosis, and you should do so, and you should immediately give him tuberculosis treatment.

Now as to treatment—what shall it be? First of all, tell your patient his true condition. Tell him that he has tuberculosis; tell him that he has a fatal malady unless properly treated; but explain to him that the vast majority recover, when they carry out proper directions; understanding his condition, you can then hope to have his intelligent co-operation; otherwise you cannot.

I believe that most authorities are agreed that three, and practically only three, things are requisite for the successful treatment of tuberculosis: these are sunshine, pure air, and nutritious food. Of course I understand that drugs occupy oftentimes a very important place in the treatment of tuberculosis, but under this subdivision of my subject, I wish to speak mainly on those points wherein we most often fail to give the patient the attention which he should have, and, as a consequence, fail to get the results which we may reasonably expect. I wish to speak of the directions which these unfortunate patients receive. It is my opinion that it is unusual for the doctor to explain his directions to these patients as he should do. Oftener than otherwise, the patient is told to go home and get fresh air and sunshine and plenty to eat. This means little to him, who is perhaps for the first time acquainted with the gravity of his sickness, and whose mind is disturbed by what he has just been told.

Go into detail in giving directions; write them if you think best, but by all means make him understand them. Explain to him that sunshine, and fresh, pure air and plenty to eat are absolutely necessary for his recovery; that his very life depends upon them. Explain to him that his poor appetite will improve under the tonic influence of pure air and sunshine. Make him understand that he must have all the sun that shines, and that he must have outdoor, pure, fresh air every hour in the twenty-four, and every day of the year. Many patients lose at night, in poorly ventilated rooms, most all, if not all, they have gained during the daytime, and in nearly every instance it is because the doctor did not explain to them just how much outside air he meant for them to have. There is no good reason why the tuberculous patient should not have outdoor air all the time, day and night, for in the spring, summer and fall he can sleep out of doors, and in winter the outside air can be conveyed to him by one of the many devices which are in daily use.

This brings me to the question of diet. Explain to your patient just what you mean by rich, nutritious food. Tell him exactly what you insist upon his eating. Tell him how often you want him to eat. Do not let him *wait* for his three meals. Give him certain food between meals, such as eggs, milk and cream, and tell him how often you intend him to have them. Cream is an excellent substitute for cod liver oil, and I am sure is more palatable. I find that many patients enjoy fat meat, and I always insist upon a liberal supply of it with their meals.

Do not fail to have your patient weighed at stated intervals, and keep a record of these weights. If he can get outdoor, fresh air, and all the sunshine, and can eat the proper food, he will get well. He will not get well if he cannot do this. He will not do this unless you tell him to do it, and explain it to him as you should do.

Explain to your patient how to properly dispose of his sputum, and make him understand that he will be responsible for the disease, and perhaps the death, of others unless he exercises the necessary precautions in his every-day life. Educate your patients so that they will be prepared to instruct their friends. Make each patient an educator of those with whom he comes in contact, a disseminator of knowledge, and not a distributer of tuberculosis germs.

I believe that if each tuberculous patient in Virginia could be instructed properly in the care and treatment of himself, and the prophylactic treatment as regards others, the disease would very materially decrease in a short time.

The people should be aroused; they must be alarmed on the subject; they

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must be told the plain, cold facts about tuberculosis, by the press, by public addresses, on the streets and in their homes. Less attention had better be given to physiology, which amounts to a farce as it is now taught in our public schools, and the children and parents taught some good, wholesome, pertinent truths about tuberculosis by those who are competent to advise. Anti-tuberculosis leagues, properly established and properly conducted, should be urged everywhere.

In conclusion, I wish to repeat that I believe that if all tuberculosis patients had the proper instruction, and that if the doctors of the State were awake to their obligation in this matter, and would faithfully apply what they now know about the disease, then tuberculosis would be, as Dr. Welch has well said, reduced one-half during the present generation.

DISCUSSION.

DR. A. L. TYNES, *Staunton:* I was specially struck with Dr. St. Clair's closing remark, that we should make patients educators and disseminators of knowledge of tuberculosis. Tell them that they have tuberculosis, and that it is a curable disease. I am also heartily in sympathy with his suggestion that we create a greater interest in the mind of the public in regard to the treatment of tuberculosis, and the duty the State owes them. In my own county of Augusta we are trying to take up this question now. We have interested our Health Commissioner in the work. He has promised to be present at our meeting in November and will make a public address, to be illustrated with stereopticon views. We want to get everybody to work. We expect to have our County Commissioners there, and are looking forward to an appropriation from them.

DR. CHARLES S. WEBB, *Bowling Green:* I did not hear whether Dr. St. Clair made reference to the use of creosotal in these cases. I have treated a number of these cases, and always give it with benefit—five drops every two hours. Do not mix it with anything. I have never seen a case in which it did not improve the appetite, and it always modifies the cough. The patient rests better, gets more sleep, and they tell me they feel better; sometimes I have noticed a very marked improvement in weight.

THE RATIONAL TREATMENT OF INDIGESTION.

By DOUGLAS VANDERHOOF, A. M., M. D., Richmond, Va.

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The first thing to consider in dealing with indigestion is that we are called upon to treat a symptom and not a disease; to be successful, however, we must not treat the symptom as such, but eradicate the underlying cause of the indigestion.

The term "indigestion" is a broad one, and covers a variety of conditions. It is here used intentionally and to include the complaints of patients with symptoms referable to the stomach or intestines.

It is well recognized that indigestion is a very common complaint, and the physician who is particularly interested in treating the condition is soon regarded as a stomach specialist. Such a designation is infelicitous and the name implies too narrow and uncomprehensive a field of work. Indigestion, in most forms, is one of the most easily cured of all conditions affecting mankind. The reason that it is not generally so regarded is because the common

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mistake is made of treating the stomach and not the patient. Therefore if the stomach specialist is one who has his entire gaze centered on the gastro-intestinal tract he is not the best man to treat patients with indigestion. As a condensed illustration is more instructive than a lengthy discussion, mention is here made of a recent case seen in consultation with a Richmond physician. The patient was a desperately ill young woman, who had been treated for "stomach trouble" for four years. She had not only run the gamut of the usual acids, alkalies, ferments and enzymes, but had been taught to use the stomach tube and had been made to conform to various "diets." This woman, on careful examination, was found to be suffering from Graves' disease, with all typical symptoms present except exophthalmos. The gastro-intestinal symptoms of hyperthyroidism are not uncommon and had been the only features considered in this case. The result was that this patient lost her life in spite of heroic treatment, whereas intelligent efforts directed to the primary condition would certainly have prolonged her life and possibly have effected a cure.

When one stops to consider, it is really surprising to note how few real affections of the stomach exist. Passing over the rare and unusual conditions and the gastric symptoms of various toxemias there remain only ulcer, cancer, and the functional disorders. This last group is by far the most frequently encountered, and yet, strange to say, receives the least attention in the text-books and in the teaching of the student. Carcinoma of the stomach and gastric ulcer, except in the acute stage, are essentially surgical affections, and should concern the internist only in the matter of prompt and accurate diagnosis.

Functional gastric disorders are either reflex in nature or associated with a general or localized neurosis. A point to be insisted on is that the diagnosis of a functional trouble, whether it be referred to the stomach or elsewhere, can only be made by exclusion after a very complete general examination.

Reflex gastric symptoms are most commonly associated with diseases of the gall-bladder or appendix. To one who does much stomach work it is really surprising how many patients suffering from cholelithiasis are encountered who give the history of having been treated for "indigestion" over a long period of time. In many cases they have had recurring attacks of biliary colic which have been diagnosed as acute gastritis, which, in my opinion, is an extremely rare condition. If so-called attacks of acute indigestion are not in reality biliary or appendiceal colic they are features of a chronic intoxication, most commonly uremia. Other patients who have gall-stone attacks are treated for gastralgia, although careful examination of the gall-bladder region and the discovery of the characteristic gall-bladder "block" will serve to prevent this mistake. There is now living in Richmond a woman whom I examined some time ago and found on gastric analysis a distinct excess of free and total hydrochloric acid. I agreed with her attending physician that her periodic attacks of indigestion were due to gastralgia, and, indeed, this diagnosis had been made by several New York physicians she had consulted. A few months later she changed physicians and was operated upon. A small gall-stone was found impacted in the cystic duct. The lesson that this case taught me is ever fresh in mind, keeps me on the alert for the detection of gall-bladder disease, and permittd me a short time ago to refer back to a surgeon a patient he sent me to treat for nervous indigestion, whereas she had definite evidence of cholelithiasis along with the globus hystericus and other neurotic signs.

Chronic appendicitis is another common cause of reflex indigestion. The futility of attempting to cure these cases by means of medical treatment must be apparent. I can speak very positively as to the good results from operation in this class of cases, having been able to follow the subsequent histories of a number of patients. Mention is here made of two rather striking cases. The first patient was a man, aged twenty-nine, who had suffered with indigestion since the age of fifteen. This took the form of discomfort in the stomach after eating, much eructation of gas, and constipation, associated with almost constant anorexia, prostration and emaciation. He gave no history of acute attacks of abdominal pain. Examinations of the blood, urine and feces were negative, but gastric analysis showed no free hydrochloric

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acid after the test breakfast, a total acidity of 12, no lactic acid and a considerable excess of mucus. Physical examination was negative except for the general evidence of malnutrition and a thickening of the cecum with distinct tenderness on palpation. The diagnosis was chronic appendicitis with gastric neurosis and anacidity. Operation disclosed a thickened and chronically inflamed appendix, which was removed. The condition of anacidity persisted for three weeks following operation, after which free hydrochloric acid made its appearance in the gastric secretion and the patient left the hospital with normal stomach findings after the test meal. He gained eighteen pounds in weight and has remained entirely well. The second patient was a man of thirty-three, who came to me with the statement that he had lost all faith in physicians, for the reason that he had had indigestion for fourteen years, and had taken treatment for the first ten years of this period. From the clinical history one would certainly have expected an ordinary case of nervous indigestion, in that he gave no symptoms suggesting ulcer and had never suffered from cramp colic of any description. On examination both the patient and myself were surprised to find marked tenderness on pressure over the region of the appendix, which caused him to flinch and draw up the right leg. He stated that this was the first examination of the bared abdomen that had ever been made in his case, and said he realized that he often suffered from discomfort in the appendix region, although he gave no history of acute attacks of abdominal pain. Operation in this case disclosed an enlarged appendix, densely adherent over its entire length to the cecum, so that it literally had to be peeled out. The laboratory examinations in this case showed a perfectly normal gastric secretion prior to the operation. After the patient left the hospital he was told that he might eat anything he desired, and a short time ago he called to say that he was not only absolutely well, but that he was enjoying hot bread and beefsteak and other articles of food which he had been in the habit of denying himself over a long period of years.

Other common causes of reflex indigestion are errors of refraction associated with eye-strain, and the pelvic diseases in women. The latter are usually discovered and appropriately treated. The relation of eye-strain to functional disorders of the digestion, while well recognized, is often overlooked by the physician, who may be satisfied with the patient's statement that vision is perfectly good, and that there are no symptoms referable to the eyes. I am very certain that valuable assistance is given me more frequently by the oculist than by any other man in relieving patients with functional stomach trouble. Several months ago a physician asked me to see a young man who suffered frequently with nausea and vomited every morning on arising and occasionally through the day. Complete physical examination in this case was negative and the gastric secretions after the test meal appeared to be absolutely normal. There was a suggestive history of eye-strain; so he was advised to see an eye specialist, who found a distinct error of refraction and prescribed lenses. At the same time his physician put him on tincture of nux vomica before meals. The patient was very skeptical about the need for glasses, and as he entirely recovered in three weeks, he attributed his cure to the medicine and threw away his glasses. The gastric symptoms promptly returned, although he continued the nux vomica, and it was only then that he was convinced that the eye-strain was the cause of his trouble. He is now quite well.

I have enumerated only a few of the common causes of reflex indigestion. These cases constitute a very definite group, and patients falling under this class will not be cured of stomach trouble until the reflex cause is removed. In the larger group of nervous indigestion occur those cases in which no reflex cause can be determined. If the diagnosis of gastric neurosis is correct, we have a class of patients that are most amenable to properly directed treatment. A careful history will disclose certain "bad habits" which have to be corrected; by which is meant bad habits of eating, sleeping, care of the bowels, etc. These patients usually suffer over long periods of time with real and not imaginary symptoms, which, while perhaps not acute, are most detrimental because of their persistence. The treatment of these cases is along the lines of re-education and psycho-therapy. The most common mistake that is made in treating these patients is putting them on restricted diets and giving medication for the stomach. This form of indigestion is very directly dependent

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upon psychic influences, and the state of mind is not only responsible for the inception of the indigestion, but also for its continuance. The indigestion takes its start following some definite cause, such as worry, grief, disappointment or other mental upsets. It is very well recognized that the state of our digestion and the secretion of the gastric mucous membrane is largely dependent on psychic influence, and this has been absolutely proved in the case of animals by the celebrated experiments of Pawlow. Every healthy being has his digestion upset at times by unavoidable worries, but promptly recovers if the cause of the worry is removed. In cases of gastric neurosis some psychic fact starts the indigestion, and then the worry over the indigestion simply serves to aggravate and continue the condition, so that a vicious circle is quickly established, the worry giving rise to indigestion and the indigestion increasing the worry. The physician who cures these cases is the one who can remove this second cause of worry; who is able to tell the patient that he has no organic stomach trouble; who recognizes that the nervous system needs treatment and not the stomach.

The most common symptom of functional indigestion is eructation of gas. This is usually looked upon as an evidence of fermentation, but I am convinced that such is not the case in the vast majority of instances. Everyone is familiar with cases in which marked flatulency and distention come on suddenly, so that the patient may have to immediately loosen the clothing to secure some relief. The condition invariably follows some definite cause which has its origin in a nervous upset, which may appear very trifling. I had a patient who was subject to frequent attacks of this kind and one of the worst of these followed a short, heated discussion with her mother in regard to a bit of millinery. It is my opinion that most of the gas which a patient will eructate is atmospheric air, and that fermentation is a rare occurrence, and only to be thought of where there is stasis of the contents of the stomach or intestines. This atmospheric air is unquestionably swallowed by the patient, although he is quite unconscious of such an occurrence. A healthy person does not do this, for the reason that the stomach is constantly in tone and in a contracted condition when not distended with food. The presence of air in the stomach (and I believe the same applies in a large measure to the intestinal tract) is due to the lack of tone of the musculature, so that the organ is easily auto-inflated by atmospheric pressure. I try to explain this by an analogy. Every organ in the body is supplied with nerves which have to do with the tonicity of the part, and, in the case of the hollow viscera, are responsible for their calibre. This is easily recognized, for instance, in the case of the blood vessels, and the close relationship between the emotions and the vasomotor apparatus is well recognized. Certain emotions cause an individual to blush, and the face becomes scarlet in color because there is a vaso-dilatation of every blood vessel of the part. On the other hand, certain other emotions cause one to turn white and become perfectly blanched, which is due to vaso-constriction. Now, in much the same way, I believe that certain states of nervousness cause a loss of tone of the involuntary muscles of the stomach and a potential vacuum would exist did not atmospheric pressure prevent. The eructation is due to the irritable contraction of the stomach wall, but the patient is not relieved as long as the loss of tone persists. The condition of air swallowing is well recognized as a symptom of hysteria, and is known as ærophagia. Typical examples of this are frequently encountered in which the patient belches large volumes of air for a greater or less period of time. Carefully conducted experiments in such instances have proved that the volume of gas expelled in a given time is far greater than could be possibly produced by any conceivable process of fermentation. I believe that the less striking and every-day examples of eructation are nothing but a modified form of ærophagia. A fairly satisfactory proof of this is to be found in the fact that these patients can often be cured in the space of a very few days by first explaining to them the nature of their trouble, insisting that they have no fermentation or other abnormal process at work in the stomach, and then administering simple remedies directed toward improving the underlying nervous condition. Last spring I treated a middle-aged woman whose chief complaint was of the constant belching of gas, which was so annoying that she frequently had to excuse herself from company. Her former treatment had consisted of drugs and restricted diet, "no acids or sweets," etc. This regi-

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men was entirely reversed, as she needed all the good food she could receive to build up her nervous system. The result was a rather prompt recovery, and the patient did not see me again until she returned to the city this fall. She had grown quite stout and was anxious to have her weight reduced. She said she had no further indigestion of any kind, but it was amusing that when I asked her to let me listen to her heart, she said, "Oh, doctor, your suggestion about my heart has frightened me, and started my belching." Such was the case. Almost before the stethescope had been applied to the chest, the eructations had started. and were frequently repeated as to actually interfere with auscultation.

Most patients who suffer with the accumulation of gas in the stomach also complain of palpitation of the heart, which they ascribe to the pressure of the distended stomach upward against the diaphragm. This view is undoubtedly erroneous. The same nervous upset which gives rise to the flatulency also causes the irritability of the cardiac nervous control, possibly by loss of tone of the vagus nerves, and the heart symptoms are not secondary to the stomach condition. That this is true is evidenced by the fact that marked abdominal distention is often seen in such conditions as typhoid fever without causing any acceleration of the pulse or complaint of cardiac palpitation.

Gastric analysis in cases of functional indigestion reveals one of three conditions; in most cases the amount of free and total hydrochloric acid is normal; in a second group we find varying degrees of hyperacidity, while the smallest proportion of cases show the absence of free hydrochloric acid and a greatly diminished amount of combined acid. What is the significance of these findings and how can we explain them? In instances of the first kind it is assumed that there is a hypererasthesia of the gastric mucous membrane, which accounts for the discomfort or pain of which the patients complain. The second group, with evidence of hyperacidity, is made up for the most part of the high-strung, overactive, "nervous" patients, and the excess of acid is probably due to an irritability of the gastric nerves which over-stimulate the glands of the stomach. The last group of patients, who have no free acid in the stomach after the test breakfast, are those individuals with partial or complete "nervous prostration," in which it may be presumed that the gastric nerves fail to stimulate the glands to sufficient activity.

One interesting fact about these three groups of patients is that they all present the same general combination of symptoms; while a second more interesting fact is that they can, in a general way, be cured by much the same method of treatment. Of course the typical burning pain that occurs at the height of digestion in patients with hyperacidity is not encountered in those with anacidity, although they may suffer with pain of a somewhat similar character. What all of these patients require is treatment directed toward the building up of the local and general nerve condition. As temporary aids one may employ gastric sedatives in hyperacidity and may administer acid to patients in whom ths secretion is deficent. These measures help to control the symptoms and so gain the confidence of the patient, and for these reasons a gastric analysis should be made in all cases, and I do not wish to be misunderstood by those who may think I have underestimated the importance of the stomach tube and test breakfast. Simply relieving the symptoms, however, rarely cures these patients. They must be told in the first place that they have no organic trouble, and furthermore that their indigestion is absolutely curable. The cause of their symptoms must be explained to them in a proper way, and they should be made to realize that it is not what one eats that gives him indigestion, but the state of his stomach nerves at the time the meal is taken. The diet should not be restricted in any direction, but the patient should be made to eat a general diet, or even put upon forced feeding. The popular idea of restricting the diet of every patient with indigestion is not only a fallacy, but is largely responsible for the continuation of the symptoms. Drugs occupy a minor place in the treatment of functional gastric disorders, and gastric lavage is very rarely indicated. As the ferments are almost never absent in these cases, I never administer them in any form. Most remedies that are exhibited for indigestion have one virtue, in that they are for the most part harmless. Simple bitters are probably of some service, and

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whatever other medication is used should be given to improve the general nervous tone.

The treatment of the constipation that is a feature of almost all cases of indigestion cannot be here considered because of the length of this paper. Constipation, however, is a condition that can be absolutely overcome, in the absence of organic disease, without the use of cathartics of any kind, and it is very essential for the cure of the indigestion that the bowels should move daily.

In conclusion, it may be said that the treatment of functional indigestion consists first in an accurate diagnosis, to be followed by proper efforts directed toward treating the patient as a whole and not simply his stomach.

DISCUSSION.

DR. TOM A. WILLIAMS, *Washington, D. C.:* One of the Parisian professors says that the great majority of all stomach cases are due to the meddlesome interference of stomach specialists and other practitioners who are not stomach specialists; that stomach chemistry is a delusion and a snare, and that the majority of these cases are ill at the stomach because they are ill at the head. Of that accusation the gentleman who has just read the paper certainly cannot be guilty, because I have never heard a more broadminded presentation even by a neurologist, and I want to express my pleasure as a neurologist at hearing a stomach specialist make such statements. Were I not a neurologist, I might have said the same thing, because Dr. Vanderhoof also indicated that some stomach affections are attributable to the eyes. Therefore Dr. Vanderhoof is an exceedingly broadminded specialist.

In regard to air swallowing, while it may sometimes be hysterical, it is rarely so. In general psychosthenia, the desire to swallow air, coming either from main habit, a fixed idea, or discomfort of the stomach, is an obsession on the part of the patient. He is not comfortable unless he swallows air. That is a problem of the mental state, but it is not hysterical, because hysterical symptoms are symptoms imposed by suggestion. It has been found that these cases precipitate their stomach condition by the fixed idea in the mind, and I would like again to qualify Dr. Vanderhoof's remarks by saying that the disorder is not in the nerves of the stomach, but are psychic, in the cerebrum, if you will, in the personality of the patient. By his morbid condition of the mind, the patient interferes with the physiological process, and thereby prevents the normal function, and as Dr. Vanderhoof says, the treatment is not of the nerves of the stomach, but of the patient's idea, and it must be a rational explanation to the patient of the psychical mechanism affected.

I wish to thank Dr. Vanderhoof for this admirable presentation of the neurological phase of stomach disorder.

DR. JOHN STAIGE DAVIS, *University of Virginia:* I want, first, to emphasize the importance of rest before meals. The laity know that we ought to rest after meals. It is just as important that food should not be taken into the stomach when tired, as not to run back to work afterward. This is specially important in tuberculosis. If there is a slight falling of the abdominal viscera, or enteroptosis, an abdominal binding put tightly around the patient will distract his attention.

DR. I. S. STONE, *Washington, D. C.:* It is necessary to have a correct diagnosis if we want to properly appreciate the condition we are treating. We should compare the findings at the operating table with the observations made in the case history, for instance, in regard to the ulcers so commonly seen. What idea have you of ulcer of the stomach? What you read twenty years ago? What you have heard lately from the stomach specialist, or what you have seen at post-mortem or at operating tables? It is one of these three things. All I learned ten years ago is absolutely of no account. Anything written ten years ago or before is not worth reading now. Diseases of the stomach are known to be as absolutely new now as any other disease, because we have a correct understanding of them. Some of us have an idea that an ulcer of the stomach is a small thing, about the size of the end of a lead pencil. Those I have seen at post-mortem and at the operating table were

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as large as quarter or half dollar. The symptoms caused by those cases were no more marked than those caused by a small ulcer. Yet we hear symptoms described, when we have no method of computing the size of that ulcer, which is a very important matter. It is one of the most difficult things to take out the stomach contents, and we find very little information as to how to treat those cases.

In all cases when a patient has been referred to a specialist, for instance, and it becomes necessary to refer the patient either to another specialist or a general practitioner, the patient should be sent back to the physician referring the case.

DR. L. G. PEDIGO, *Roanoke:* I have found that the occupation of the stomach specialist is about gone. The best I can make out from this very entertaining and interesting paper is that the chief function of the stomach specialist is to make a diagnosis, and then turn all gall bladder cases, and ulcers, and cancers of the stomach to the surgeon, and all the other cases over to the neurologist and the Christian Scientist.

Dr. Vanderhoof has told us that we must make a very accurate diagnosis between these functional disorders, and then that the treatment of them all is about the same. I do not know what the diagnosis is particularly for. Personally I have always undertaken to resist what I have called ultraism in medical opinion. A very few years ago we treated the stomach as a test tube, and thought we had solved the problem then. By making a test meal analysis, finding out the error and correcting it, the whole thing was done. That was the extreme opinion at the time. Now the profession has swung back to the other extreme, that all these distinctions are practically vain.

Finally, Dr. Davis told me something that I thought would be tangible, and I have found it so in my own practice, and that is the diagnosis and treatment of visceroptosis. I have sometimes thought that I could find something real in that apart from the imagination of the patient. Sometimes I have found it hanging way down in the left iliac region, and that was something tangible. I was glad to hear Dr. Davis speak of putting on the belt. I think I have benefited some of these cases with the Rose belt. I was disappointed at the very last to hear Dr. Davis say that when you put on the belt it would do good because it would direct the patient's mind off of his case. No man estimates more highly the importance of the psychic side of medicine than I do, but I don't think we ought to swing to the extreme. We are passing just now from therapeutic nihilism, or more familiarly known as Oslerism. I do not know how far we will swing in the other direction—maybe to the omnipotence of drugs, but let us see if we cannot hold ourselves on the middle track.

DR. C. M. HAZEN, *Bon Air:* In a little while the pendulum will settle down. There is no use in getting a psychic condition mixed up with an actual neurological one, nor with physical conditions. If a belt to the abdomen will relieve the patient's mind, it is all very well, but correct the lack of spinal tone, which is the most common seat of the trouble. There can be no objection to a full diagnosis of stomach conditions. Having done that, we know whether it is neurasthenic, or a case of ulcer or something of that kind. I was glad to hear Dr. Vanderhoof bring out the fact that in so many cases the trouble is not in that organ, but in the nerve supply of the organ. Again, we have to make a clear diagnosis as to what part of the nervous system is out of fix. The stomach has its own nerve supply. The plexus of Meissner lying under the mucous membrane connects up all parts of the stomach. They control their own secretions. We have the vagus supplying the stomach and intestines, we have the splanchnics, and the large motor nerves, which are exceedingly important. It has its secretory supply. Now, where is the trouble when you have a case that is distinctly nervous? We cannot experiment nor by electrical diagnosis find out the facts, but we can think them out, and treat accordingly. Fortunately the treatment for neurasthenia will improve these conditions. You have got to correct the trouble that is back of the stomach condition. At once it is apparent that in many cases it is the spinal cord or the general nervous system that needs treatment. I am sure we are losing no ground if we allow the pendulum to settle down and find out where we are, if we make a careful stomach diagnosis, and then treat the case on those

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grounds. The mere fact that a nervous diagnosis is needed is not laying aside the fact that a stomach diagnosis is necessary. Ptosis is usually due to lack of tone in the spinal cord. What is the use of putting a crutch on a man when the trouble with the spinal cord is back of the limb? It is absolutely necessary to restore the tone of the spinal cord, which can be done sometimes by drugs, sometimes by hydrotherapy and electrotherapy. We have here conditions of the nerves largely, and we must direct our attention largely to the underlying nervous conditions.

DR. VANDERHOOF, *in conclusion:* In the first place, although probably three-fourths of my work is in treating patients suffering with indigestion, I resent being known as a stomach specialist. Furthermore, I resent in this connection being known as a neurologist. Furthermore, while I do refer my cases of gall-stones to the surgeon, likewise appendicitis, while I also call on the oculist to correct errors of refraction, yet, on the other hand, cases of functional nervous stomach trouble I treat myself, if they come to me, and in that respect I believe Dr. Pedigo's sweeping remarks are not in accord with my idea. It is impossible in a paper of this kind to take up the various phases of indigestion. The points that I tried to emphasize are that, when a patient comes to you, having been treated for years and years for stomach trouble, and still suffering, in these cases, properly directed treatment toward the underlying condition will cure them, and they will stay well unless they have some nervous shock which upsets them. While they may suffer a relapse, they then know how to control the symptoms themeslves. Indigestion is all too frequent. Every third or fourth man on the street is a sufferer with it. With a great many doctors this is such an important subject that all of this discussion is of great practical importance.

PRESENT-DAY VIEW OF ARTERIOSCLEROSIS AND ITS SIGNIFICANCE.

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Formerly arteriosclerosis, when present at all, was thought to be a general chronic disorder of the arteries. It was held to be in a majority of cases a diffuse degeneracy of the walls of the arterial tree, coincident with certain causal factors of long standing. If the radial and the temporal arteries, for instance, were palpably arteriosclerotic, it was considered without question that the other arteries of the body shared in the same sclerotic state. Also if the eye-ground disclosed evidences of arteriosclerotic disease, it was thought that the entire vascular tree partook of the same condition, and were alike sclerotic. In recent years, however, a different view of this matter has been promulgated by a number of observers, chief among whom may be mentioned Huchard, Josue, Russell and Robin. These and other prominent clinicians contend that arteriosclerosis may be both a general and a local affection. In some cases it is found as a systemic condition; in others it is found as a regional or local condition. So our present view of this phase of the matter enunciates the contention that the presence of a local artriosclerosis does not necessarily mean a general or systemic arteriosclerosis, and further, that the absence of sclerosis of palpable and observable arteries does not mean the absence of arteriosclerosis in the internal or non-palpable arteries.

So it is now held that serious arterial sclerosis may exist in the body without the same appearing in the external arteries. Every clinician has had

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cases illustrating this fact. For instance, the sclerosis of the coronary arteries may exist without the coexistence of systemic sclerosis. Brooks has well shown this by reporting the post-mortem findings on 400 cases of arteriosclerosis, in which he found 270 cases of sclerosis of the coronary arteries, and of that number only 154 showed any external of superficial arteriosclerosis. These port-mortem findings agree with the experience of clinicians who see cases of angina vera and angina sine dolore where the presence of sclerosis had not been suspected or discernible externally. Again, sclerosis of the abdominal arterial walls without associated external sclerosis has been demonstrated both by post-mortem and clinical findings. Perutz, especially, has been foremost in asserting the existence of certain symptoms appearing periodically in the abdomen which are characterized by paroxysmal pains in that region, with high blood pressure, and attended by an array of symptoms which have been variously entitled "Angina Abdominalis," "Intermittent Limping," "Intermittent Claudication," and so-on.

Again, sclerosis of the cerebral arteries may occur without the external evidence of sclerosis in the other arteries of the body. This has been confirmed by Collins in his post-mortem findings in connection with this subject. In the practice of many observers, cases can doubtless be recalled that corroborate this pathologic entity. If time permitted I could cite in detail cases now under my observation confirming the truth of this regional sclerosis. Also in the pulmonary arteries has this local sclerosis been observed without the presence of the systematic sclerosis. Post-mortem findings of Monchberg and Romberg confirm this statement. Formerly vessels showing sclerosis were taken to be hard, set, fixed, incapable, when the pathologic degeneracy was established, of responding to stimili of constriction or dilation. In those days it was thought that arteriosclerosis meant immobility of the vessel wall, responding neither to the contents of its channel nor to the stimulation of its nerves of constriction or dilation. But now a different view is taken of this matter. Russell, in his excellent book, champions the view that arteries, which have become arteriosclerotic, are susceptible to additional constriction, and when excited, do so maintain a state of constriction on the blood stream in addition to the physical obstruction resulting from the sclerosis. It is now thought that sclerotic vessels in which courses deleterious pabulum are caused to tighten up on the blood stream and produce a state of hypertonus in addition to that produced by the thickening of the vessel wall. Of course, in contemplating this subject in this connection, one must keep clearly in mind the distinction between the arteriosclerosis and the atheroma of arteries.

In atheroma, with its irretrievable infiltration of calcarious product, little is to expected in the matter of dilatation or constriction. But even in this pathologic condition, before the calcification has enveloped the vessel wall in all its coats, some response has been gotten from the stimulation of the wall to constriction or dilatation. So the former conception of the rigidity of the arteriosclerotic vessel must be replaced by the latter-day view, that the arteriosclerotic vessel, when under the influence of sufficiently exciting cause, maintains an additional contraction and obstruction to that inherent in the sclerosis.

There are a number of causes which, it is contended, will produce arteriosclerosis and which will maintain this state of contraction in the vessel wall after the arteriosclerosis is established. Into the pathogenesis of the disease it is impossible to go, but to one causal factor in the tightening of the vessels I wish briefly to allude. We know that the composition of the blood has a direct influence on the walls of the blood vessels. This influence may be through the nervous system, or it may be from the direct effect of the blood composition on the structure of the vessel wall. This latter influence has been repeatedly confirmed by experiments and by clinical observation. Vessels, from which have been severed all nerve connection, have shown hypertonic constriction. This subject can only be dealt with at this time in connection with the eflect upon the sclerotic artery of the presence of products of intestinal digestion in the blood. It is now thought that the pabulum of the blood, as it comes from the intestinal circulation ladened with end products of digestion, or bodies of intestinal fermentation or putrefaction, has a decided influence on the calibre of the arteries already sclerotic. In a general sense, there are two influences to be looked for in connection with this point: first,

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the absorption of excessive amounts of digestive end products; second, the continued absorption of deleterious substances from intestinal fermentation and putrefaction.

It is not within the province of this paper to follow the changes carried on in nitrogenous digestion from the proteid to kreatin—kreatin in urea and ammonia; in carbohydrate digestion through glucose to ethyl alcohol and carbon dioxide; in fat digestion to acetic acid and formic acid (Taylor), but it is our purpose to lay down the proposition that the excessive intake and digestion of more food product than is necessary for the body, or the perversion of the processes of digestion of proteids, sugars and fats, serve as important causative factor in the maintenance of the sclerosis and hypertonus in sclerosed arteries. This is notably true when the perversion of digestive products becomes so permanent and general as to cause the appearance of such diseases as gout and diabetes. Further, in connection with the absorption of harmful bodies from fermentation in the intestinal canal, it is believed that the acetone bodies have a decided effect upon the tonus of the vessel wall. Also the absorption of the purin bodies from intestinal putrefaction, as illustrated especially in the case of the aromatic series, as phenol, cresol, skatol and indol, is a decided factor in the production and maintenance of spasm in the arterial wall.

In addition to these modern views of arteriosclerosis, I wish to mention another. In former times, medical attention failed to fully appreciate the initiatory step connected with the formation of the sclerosis of arteries. Little attention was given to the subject until after the established pathologic change was demonstratable and evident. Now, however, the attention of medical thought is being directed to the incipiency of this important dsease process, and it is becoming more generally conceded that there is a stage preceding the sclerosis, before morbid changes are fixed in the structure of the vessel wall, which should rightly be called the presclerotic stage. While it is dificult, in many cases, to demonstrate pathologic changes in arterial wall, illustrative of this stage called presclerosis, yet the experience of every clinician is rich with cases exemplifying this condition, as proved by subsequent events or by therapeutic test, or by coincident clinical evidence. These cases show no state of hypertension by sphygmomanometric reading and no palpable hardening in the arterial wall under the finger. There may be present no cardiac or renal disease. This view of presclerosis has been championed by Henri Huchard, who expressed this opinion, after an extensive study of sclerosis. O. Josue, in *Medical Press* of Paris, under title "Early Signs of Arteriosclerosis," confirms this view, and speaks of that state of the arteries when the elasticity is sluggish, when response to stimuli of contraction and dilatation is tardy, when a condition of spasm prevails in the arterial walls.

These symptoms of incipient arteriosclerosis may be vaso-motor, nervous, respiratory, cardiac, intestinal, cerebral, etc. Of the latter, there may be a loss of ambition, a change of mental stamina, impairment of memory, laborious speech, despondency, irritability, somnambulism, and headache. The headache may be more or less constant, varying in intensity, being periodically severe. Its presence may be felt in the form of a throbbing oppression in the skull, which may be easily excited into an attack of great intensity by worry, business activity, physical effort or alcoholic indulgence. That condition, neurasthenia, sometimes is explicable only on the basis of incipient sclerosis. Those cases in men about the fifth decade characterized by mental unrest, illusions, and hallucinations of one kind and another, suspiciousness unusually acute, seem to be often due to the unpathologic entity termed presclerosis. In other cases of this kind there will be found complaints of vertigo, oppression in the head, sluggishness of mental action, numbness in extremities, and maybe delayed motor action in the hands and feet, or some other exhibition of impairment of motor control and activity. Also, as confirmed by A. Robin, there are certain syndromes of the stomach and of the intestinal region which are attributable to this embarrassed arterial supply; certain abdominal pains, classed as splanchnic neuralgia, or angina abdominalis, or intermittent claudication in the abdominal viscera. Those attacks of the heart, ranging from angina vera to angina sine dolore, may be due to this condition of arterial spasm prior to the establishment of the fixed arterial degeneracy. Also attacks of dyspnœa and tachycardia, not con-

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nected with certain well known lesions of these organs, may be classed in some cases as admonitory signs of arterial sclerosis.

In conclusion, I wish to indicate the lines of therapy to be used in cases of arteriosclerosis. In the light of the foregoing points on this condition the line of treatment will necessarily vary with the nature of the sclerotic condition.

Taking up those cases which are grouped under the presclerotic stage we have opportunity for effective treatment and the relief of ugly and ofttimes perplexing conditions. For instance, those cases which are of the neurasthenic type—that syndrome so varied and disquieting, due to this incipient sclerosis. In those cases the regulation of the diet, the management of the habit, the institution of hydriatic and physical procedures, with medical treatment, afford wonderfully beneficial results; and if properly controlled and admonished, the patient's secure protection against the serious results of arteriosclerosis.

The diet in these cases should be carefully ordered and imperatively controlled. The intaking of more food product than is needed, and the putrefaction and fermentation of the same in the intestinal canal and the absorption thereof, is one of the most frequent causes of this condition. The quantity of food should be small. The diet should be free, as much as possible, from nitrogenous food, alcohol, coffee, tea, and the patient should be restricted in the use of tobacco. The vegetable diet and the use of eggs and milk in proper quantities is the form of diet to be relied on, subject to modification as demanded.

The use of hydriatic baths and massage and electrotherapy, in skillful hands, does assist in the relief of these symptoms and restore often these patients to comfortable living. In cases of sclerosis with more or less spasm, and in cases of local sclerosis, in addition to measures already mentioned, the use of certain medicines is imperative. Having taken steps to prevent a continuance of the causative factors, the use of the iodides, in the form of iodide of sodium and iodide of potassium, is recommended. Huchard uses theobromine in these cases. Ortner recommends iodipin subcutaneously in 15 mm. to 60 mm. doses. Babcock recommends the use of calomel. Truneck's serum, 10 cc. daily, has been introduced, but as yet it has not been generally accepted as useful in all cases. This is composed of a number of physiological blood salts. Its value is in dispute. In the nitrites, we have a group of drugs offering relief from hypertension and favoring in connection with the iodides a hope of more or less comfortable security for a long time from the direful consequences of an unchecked arteriosclerosis; Amyl nitrite for emergency and instantaneous vaso dilator effect; nitroglycerine for more permanent and longer use; and sodium nitrate for the most persistent dilatation and for more extended use. Lately the use of erythrol tetranitrate (1-6 to 1-2 gr.) has come more extensively into use. In my hands it has proved to be most efficacious in lowering hypertension, and, with the dietary and hygienic measures, it has done good work in averting, in a number of cases, what seemed to be of grave prognosis.

In my last word, I would say that in treating that wide array of symptoms which assemble under the heading of arterio-sclerosis, I have been, in the last few years, impressed with the excellent results to be gained by careful, persistent and extended treatment of such patients.

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EXTERNAL USES OF MAGNESIUM SULPHATE, WITH A BRIEF REFERENCE TO CASES.

By JOHN S. HARRISON, M. D., Elm City, N. C.

There can be no doubt that if a rational scientific application of drugs to diseases is to be encouraged, then their empiracal use should not be countenanced. On the other hand, it is a fact that, even to-day, therapeutics does sometimes advance faster than scientific research. I am sure every active practitioner present will bear out this statement, and will confess using remedies for which he can give no explanation of their physiological action. Mercury plays the same important part in the treatment of syphilis that it has for generations. Who among the older men here did not regard the salicylates as a specific for rheumatism long before it was known that it was an infectious disease? And was not quinine regarded as the remedy of choice in treating malaria for years before the discovery of its cause? It has been one of the blessings of human life that we have had many remedies whose action we cannot explain because science has not advanced far enough to discover the disease process which they influence, nor the manner in which they produce their effects. It is to be hoped that some of the energy expended upon the new remedies will before long be devoted to making the use of the old ones more rational. But not until the men in our laboratories, the physiologists and pathologists, have worked out the true cause of all ills to which flesh is heir can we hope to have an accurate scientific application of drugs to diseases.

The idea of using an old-fashioned remedy like epsom salts as an external application is not original with me. My attention was first directed to it about eighteen months ago by an article from the pen of Dr. Henry Tucker, of the Philadelphia General Hospital, in which he reported having obtained most excellent results in treating orchitis by wrapping the scrotum in a saturated solution of this salt. Then in the way of an experiment, more than anything else, I began using it in other forms of inflammation, and it is on account of the uniformly good results obtained from its use that I am prompted to bring the subject before this Society.

How these results are brought about in conditions the causes of which are seemingly so widely at variance with each other I have no rational explanation to offer. It has been suggested that it is by its direct bacteriocidal action that a cure is effected, but this is not borne out by clinical experience. Others have claimed that osmosis plays an active part, but when we stop to consider that other salts which influence osmosis to greater extent do not exert the same beneficial action, then it would seem that this theory is also disproven. So until the pathology of the diseases in which it is of benefit shall have been worked out we will be compelled to continue its use in a purely empirical manner. It is in this empirical way that I have used it, first in orchitis, after Dr. Tucker's suggestion, then in erysipelas, ivy poison, "dew poison," superficial burns, and in acute articular rheumatism when the salicylates are not well borne. Thus you readily see its wide range of usefulness.

The method of application is practically the same as that of any other moist dressing, varying in some minor details, of course, with the nature of the particular case. Either a layer of from fifteen to twenty thicknesses of gauze, or a thin layer of absorbent cotton, neatly bandaged, covers the entire inflamed area, and is kept continuously wet with a saturated solution of the salt. This is covered with oiled silk, or waxed paper. In order to insure the dressing being kept continuously moist more of the solution should be added from time to time.

These dressings are allowed to remain intact from twelve to twenty-four hours, and then only removed to be reapplied immediately after examining the part, until the temperature has been reduced to normal and all signs of inflammation have disappeared. It is best, too, not to wash the parts during the application of the solution. And in every instance it is necessary to obtain absolute rest for the inflamed part.

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POTASSIUM BICARBONATE AND HYOSCINE HYDROBROMIDE IN THE TREATMENT OF INFLUENZA.

By STEPHEN HARNSBERGER, M. D., Catlett, Va.

I shall go little beyond the aim of this paper—to direct attention to the use of potassium bicarbonate and hyoscine hydrobromide in the treatment of influenza.

Owing to the frequent appearance of influenza in this country, its rapid spread over wide areas, its great muscular and nervous prostration and grave complications, the subject of its treatment should not grow uninteresting to the general practitioner.

A prominent symptom of influenza is pain, and it is to ease the disquieting pain that the physician is mostly called. The milder anodynes usually bring prompt relief in the less aggravated cases; but not a few patients, generally of the robust class, suffer intense pain in the forehead, temples and eyeballs. These patients are not relieved by the ordinary remedies for pain. They are not even satisfactorily eased by morphine and atropine hypodermically, and when they are relieved it is at the expense of the excretory and secretory functions, which is always an undesirable disturbance, and especially so when dealing with conditions of toxæmia. I will cite two cases:

In January, 1908, I was called to see a colored man with influenza. He was about twenty-six years old, of stout build, and with a record of perfect health. The pain in his left temple and eyeball was so intense that he had to be kept under constant restraint, so persistent were his efforts to take his own life. He also complained of pain in his muscles, back, etc. I felt almost certain that the usual dose of morphine and atropine would not ease him, and as I was needed elsewhere, I did not wish to remain with him during the time that should elapse before administering a second dose, so I at once concluded that hyoscine hydrobromide, 1-100 gr., added to the morphine and atropine would ensure my earlier departure. I injected the drugs hypodermically and waited. Fifteen minutes passed—no apparent relief. With the assistance of several men who were present, we put him on a couch and held him there until I could anæsthetise him. I used chloroform, which soon took effect, and he readily lost consciousness in sleep. He had a good night's rest, and the next morning "felt like a new man."

A second case: Male, white, aged thirty; condition similar to that of the colored man. Focus of agonizing pain was forehead and eyeballs. A hypodermic of hyoscine hydrobromide, morphine and atropine put him to sleep in a very few minutes, and when he awoke the pain was practically gone.

Patients subjected to the subcutaneous administration of hyoscine, etc., improved more rapidly than those (even the mild cases) treated without it. Administered in this way, hyoscine seems to overcome the undesirable side effects which morphine usually manifests when used alone. Hyoscine will do away with the rachalgia and myalgia as well, and it may be possible that every influenza patient, suffering pain to the degree of constant annoyance, would do better if we were to prescribe it as a routine procedure. Granet (*Dietetic and Hygienic Gazette*, February, 1908), gave immediate relief to a case of refractory influenzal neuralgia with a single dose of hyoscine hydrobromate (1-100 gr.) in solution with quinine hydrobromate (5 grs.). Quinine and the salicylates have not given me uniformly satisfactory results. They may do better, however, by giving them in conjunction with potassium bicarbonate.

Perhaps the most striking feature of influenza is the great muscular and nervous prostration which so frequently comes on at the outset of the disease, and very often continues long into convalescence. This is noticeably true of subjects whose vitality is lowered by neuropathic heredity or chronic maladies; and it seems that these persons are among the first to be affected. During the epidemics of 1889 and 1891, etc., when pneumonia was such a common and fatal complication, or sequel, this great muscular and nervous

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æsthenia seemed to hold a causative relation to the great number of deaths from pulmonary involvement. Pneumonia, then as now, usually came on just before or during the early part of convalescence. The least exertion or exposure or other imprudence was enough to invite pneumonia. Some years ago I made the statement (*Philadelphia Med. Jour.*, November 10, 1900), that the great mortality from pneumonia during the epidemics of 1889 and 1891 was caused by the immediate and disastrous weakening effects of the influenzal poison upon the heart muscle. Up to that time we rarely, if ever, heard of deaths from " heart failure"; and the fact that these sudden deaths occur more and more frequently as time goes on, leaves us not without a reason for the belief that the bacterial toxines of influenza work a lasting injury to the myocardium.

Once that influenza is on, we cannot prevent it, but a fairly successful clinical experience suggests to me that we can prevent, or abridge, the very common complications, and as the fatalities are due to the complications, anything that will ward off or lighten the latter is not beneath consideration.

If there is much pain or prostration, the influenza patient is usually willing to keep to his bed, and if there is no pain and no prostration, he should take to his bed. In either case, the bed is the safest place for him—it is the safest during the attack, and his only safety through convalescence. Get this fact fixed in his mind. The next requisite, and no less important than quiet in bed, is calomel, and calomel to the full cleaning out of the gastro-intestinal route. Then the way is open to the best action of potassium bicarbonate. Order potassium bicarbonate, 30 to 60 grains, every four hours, and, if possible, have the patient drink a glass of water after each dose. Require absolute abstinence from food for forty-eight hours, and you will be happy, and he ought to be, over the usually satisfactory feeling that is his in so short a time. Continue the rest in bed and keep up the action of the liver and bowels. I should not omit the fact that potassium bicarbonate will abort colds. Administer it from the onset of the cold and follow the directions outlined above for influenza. It is especially useful in establishing resistance in persons subject to colds.

Results should disclose facts and the results following the use of potassium bicarbonate in more than one epidemic of influenza (in every epidemic since 1889) demonstrate to my mind that it is of value in the treatment of this disease. Now, we all will admit that results in treatment are good, but results in preventing complications, which control the fatalities, are unquestionably better.

Potassium bicarbonate is very soluble in water, and when the constitutional effect of potash is desired, administer it in dilute solution. The larger the dose the more energetic its action, and in severe cases of influenza you want systemic saturation to take place quickly. Usually in from forty-eight to seventy-two hours the patient is under the full influence of the drug, and, as a rule, it is not worth while to give it longer.

Potassium bicarbonate may not always succeed at once and completely. This failure to succeed may be due to its want of action in that particular case; or it may be from inefficient nursing, or again from ignorance or carelessness, but more often from wilfulness on the part of the patient—rarely to idiosyncracy. At any rate, there will be failures, but, upon the whole, I am sure there are fewer complications, and, of course, a smaller mortality than from any line of treatment with which I am familiar.

The benign effect of potassium bicarbonate is frequently augmented by the rational administration of acetanilid in combination with monobromated camphor and caffeine. Acetanilid not only helps to mitigate the pain and quiet the nervousness, it produces sweating, which is always beneficial. Sweating is a favorable condition in the treatment by potassium bicarbonate, because it is equivalent to an increased dose of the drug. The sweating eliminates acid from the skin, and in this way increases the alkalinity of the blood.

In conclusion, I would not have you think that I rest the outcome of my influenza patients solely on my conception of the efficacy of potassium bicarbonate and hyoscine hydrobromide. Potassium bicarbonate serves as the burden bearer—isolation, baths, fresh air, mouth, nose and ear hygiene, and other things that may add to the patient's comfort and well-being, deserve concomitant consideration.

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IS MERCURY A SPECIFIC IN INFECTIOUS AND CONTAGIOUS DISEASES, AS WELL AS IN SYPHILIS?

By H. E. JONES, M. D., Roanoke, Va.,

Surgeon Rebekah Sanitarium.

In a private practice of twenty years I have treated several hundred cases of syphilis with bichloride of mercury. While under my observation, and taking active treatment for from a few months to five years, I have never known one of these syphilitic cases to contract a serious infection or contagious disease. This observation put me to thinking. I got the impression that bichloride of mercury was not only a specific for syphilis, but for all other diseases that are caused by living organisms, whether animal or vegetable. We are aware of the fact that we have many antiseptic preparations that will kill any and all germs outside of the body when applied in sufficient strength, but we are handicapped with the belief that if we administer the germicide to the host in sufficient strength to destroy the parasite, the former would be destroyed instead. Hence, the profession has hesitated, has been timid, in using the most potent germicide in sufficient strength in all the germ diseases save one—viz.: syphilis. Of all the germs that are most tenacious to life, it is the one that is the cause of syphilis—viz.: spirocheta pallida. We know from literature on the subject, and many of us from experience, that bichloride in sufficient strength will kill this germ in the human being more slowly by the mouth, skin and inhalation, but quickly and certainly by the hypodermic method.

Now, if this tough, tenacious, loathsome, disease-producing germ can be destroyed while occupying the position of a parasite in the living tissues, tell me why any other disease-producing micro-organisms, vegetable or animal, cannot be killed by it while living in the human organism? It is my firm belief that they can be killed by bichloride, or at least it checks their development and retards their growth, provided it is used as heroically as we use it in the treatment of syphilis.

For a number of years I have treated scarlet fever with bichloride, and I cannot recall a single death, when the cases came under my care early before complications or profound toxemia had developed. The past winter, spring, summer and fall I have treated with bichloride as the specific agent quite a number of cases of measles, pertussis, la grippe, pneumonia and typhoid fever without a complication or death. In the summer of 1907-1908 I treated a number of cases of intestinal diseases in children with bichloride, and I do not recall a single case of death when the cases had been secured early.

In no disease (except syphilis and recently in tuberculosis) have I used the mercury salt hypodermically, but would not hesitate to do so in really severe infections. For an adult I generally use from 1-16 to 1-8 of a grain at a dose every two or three hours; children in proportion, except in severe syphilis. In such cases I administer it hypodermically 1-16 to 1-8 of a grain once a day for four days, and then twice a week for three weeks, and give them during the hypodermic medication 1-16 to 1-8 of a grain by mouth five or six times daily, and continue it for several months, or longer, if necessary.

It is my opinion that the great success physicians had before the introduction of the germ theory of disease was due to their use of mercury in large doses in the treatment of all the infectious and contagious diseases. We, in modern times, consider these large doses obsolete, and have restricted the therapeutic use of the drug to surgery, syphilis and a few minor functional diseases, and use it in practically homeopathic doses.

Dr. Barton L. Wright (Ft. Lynn, Las Animas, Colorado), who has charge of a tuberculosis hospital for the United States Government, has treated thirty-five cases of tuberculosis that were infected with syphilis. He discovered the fact that tuberculosis is benefited and being cured by the hypodermic use of, I believe, the salicylate of mercury. Thirty of these cases are showing the bene-

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fit of the mercury treatment "by the reduced pulse rate and temperature curve, an increased appetite, lessened cough, and gain in weight." He also says: "I have conclusively demonstrated that it will cure extremely advanced tuberculosis of the larynx and the pharynx in a remarkably short period of time. We have shown that it produces marked improvement in advanced pulmonary lesions, and that it also has a decided beneficial action on tubercular glands." The profession should wake up and take notice of Dr. Wright's discovery. It is important and convincing, and should not be brushed aside and dismissed from the mind as soon as read. Let us use the treatment in all future tuberculous cases and other infectious and contagious diseases, and watch the result; keep a strict record and report cases to the local societies and to the profession through the journals.

Dr. Koch has proven that bichloride is the most potent and powerful of all the antiseptic drugs, and of all the difierent preparations of mercury. It is stable in most acid, alkaline and neutral solutions; the alkalinity of the blood and tissues is due to disodium phosphate, carbonate and bicarbonate (*Chemical Diagnosis*—Wood). When the bichloride is absorbed it remains unchanged and is excreted as such, and not as a non-absorbable albuminate; hence its germicidal effect is unchanged, and the tissues and blood cease to be a fit soil for germ development, and finally in a few days the germs are destroyed.

Dr. Laplace found that a solution of one to fifty thousand would destroy the germs of suppuration. A 140-pound man would have about ten pounds of blood or 76,800 minims. One grain of bichloride of mercury given every twenty-four hours, in fractional doses, which can be done without injury, will make a solution of 1 to 76,800, and given daily for a few days, owing to its accumulation, would make a blood and tissue solution probably as strong or stronger than 1 to 50,000, which is more than sufficient, with the aid of the germicidal power of the blood and tissues to destroy the germs of syphilis and suppuration and any other living germ that may be present.

Dr. Bacilli and Dr. Jemma have used bichloride intravenously for cerebral syphilis with success. It is used in typhoid, rheumatism, erysipelas and tuberculosis, and its curative effects upon these diseases is rapidly manifested. It is given in solution of 1 to 1,000 strength, 15 to 60 minims; dose enough of solution to make 1-64 to 1-16 of a grain of the drug.

Dr. Shoemaker has employed it hypodermically in psoriasis with complete success. Dr. Poncel in 1890 employed it in tumors of cancerous appearance, followed by their complete disappearance. Dr. Celli cured a case of traumatic tetanus. M. Julian cures gonorrheal rheumatism. Dr. Bacilli says: "The parasite of hydatid cyst of the liver is destroyed by a 1 to 1,000 solution, and the patient is cured."

In text-books we are told that it is used with marked beneficial and curative effects in scarlet fever, diphtheria, ozena, urethritis, gleet, tuberculosis, cystitis, tubercular joints, glands and abscesses, fermentative dyspepsia, digestive disorders of infancy, Asiatic cholera, enterocolitis, dysentery, scrofula, gastric ulcer, pneumonia, tonsilitis, meningitis, pleurisy, endocarditis, and peri-carditis, peritonitis, measles, smallpox, pyæma, septicemia, typhoid fever, nephritis, malaria, and purpura hemorrhagica. It is a diuretic and a wonderful tonic and alterative. It increases metabolism, the corpuscles and hæmoglobin of the blood, weight and strength.

A representative case of typhoid treated with bichloride I will report, and let you draw your own conclusions. For a few days before the patient quit his work he lost his appetite, complained of langor, headache, nausea, pain in back and limbs, and a tired, lazy feeling. On May 17th he remained in his room and dosed himself with calomel and quinine. On the night of the 19th he had a shaking chill, followed with fever, aching all over, with a severe headache, and vomited fermented food and bile. He sent for me the morning of May 20th at 6 o'clock. I arrived at 8 A. M.; his pulse was 101; his temperature 101 1-2; tongue coated; complexion sallow; conjunctiva yellowish white; had cough and feeling of discomfort and oppression over front of chest; slight pains in left side in region of the spleen; stomach and bowels tympanitic and painful on pressure. I ordered calomel, to be followed with saline, and made a prescription, composed of strychnine, phenacetine, aspirine, salicylate of quinine and powder lacto-peptin, put up in capsules, to be given every three

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or four hours; diet was restricted. I visited him on the afternoon of May 21st; he had a temperature of 102, with a pulse of 105. I ordered 5 grains soft quinine capsule to be given every four hours for three doses a day; also continued the first prescription. I continued him on this treatment until May 26th, and his fever continued from May 20th (my first visit to him) to May 25th from 100 in the mornings to 102 in the afternoons, with slight tympanites and soreness of the bowels and stomach. When I visited him on the morning of the 26th, when his temperature was 100, and the same day at 4 P. M. it was 101 1-2, I discontinued the quinine and prescribed 1-16 of a grain tablets of bichloride, to be given every two hours when awake. The following temperature chart will show for itself, giving the minimum morning temperatures, and the maximum afternoon temperatures while taking the mercury salt:

	A. M.	P. M.
May 26	100	100 1-2
27	99	101 3-5
28	98 2-5	100 2-5
29	98 3-5	100 2-5
30	98 4-5	99 4-5
31	99 2-5	99 3-5
	A. M.	P. M.
June 1	98 3-5	99
2	98 3-5	99 4-5
3	98 2-5	99 3-5
4	98	98 3-5
5	98	98 3-5

There was no tenderness nor soreness over the stomach and bowels after June 1st, six days after the commencement of the bichloride treatment.

You will observe from the above chart that his morning temperature dropped to normal on the third day after commencing the bichloride, and the afternoon temperature to 100 2-5. On the fifth day the afternoon temperature dropped to 99 4-5 and continued at 99 3-5 until the tenth day, when it dropped to normal. From the third to the eleventh day the morning temperature was normal except on the sixth day, when it reached 99 2-5, and on the tenth and eleventh days it was 98 in the morning and 98 3-5 in the afternoon, when I advised the patient to take about three tablets a day for several days, when I would call and see if his temperature remained normal. In three or four days I called to see him, and his temperature was still normal morning and afternoon, when I discontinued my visits.

In the *New York Medical Journal*, August 15, 1908, Dr. Merzbach, of Berlin, in an article on the "Origin, Cause and Treatment of Syphilis," gives the latest mode of treating that disease with albumino-cholo-tannate of mercury, which can be administered in maximum doses by mouth, 7 1-2 grains daily, without any corrosive effect on the alimentary tract, blood or tissues, but says that daily doses of from 2 1-4 to 4 1-2 grains are usually sufficient to meet the requirements of successful medication, and can be repeated daily indefinitely without harm or discomfort to the patient, with neither pain, colic nor diarrhœa. He says that its absorption and elimination is regular and rapid. He begins with a dose of 3-4 of a grain three times a day for four or five days. On the sixth day he gives 2 1-2 grain tablets twice a day and continues this amount for some days, and then, according to the case, gives smaller tablets more frequently during the day, until 7 1-2 grains a day are given. With this treatment the symptoms of syphilis rapidly disappear, mucous and skin lesions disappear in from twenty to thirty days. In secondary or old infections the lesions disappear in from one to two months. The administration of mercury albumino-cholo-tannate does not interfere with daily life, and is neither weakening nor dangerous, and the general health of the patient does not deteriorate.

If this preparation of mercury proves to be as potent as bichloride in the treatment of infectious and contagious diseases, and yet free from any disagreeable or objectionable effects, and is not dangerous to life, and is easy and convenient of administration, what a boon to humanity it will be!

The chief advantage Dr. Merzbach claims for the albumino-cholo-tannate of mercury over the bichloride is its convenient administration in tablet form,

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by mouth, and the relatively large amount of mercury that can be taken in 24 hours—7 1-2 grains of the former and 1-2 grain of the bichloride (the last amount is a small figure, as from 3-4 to 1 grain can be given a day without injury). It is a well known fact that all chlorides are antiseptic, some of them the most powerful we have, but not all of equal strength. Calomel can be given in 5, 10, 20 and 30 grain doses for a few doses, but cannot be continued for any length of time, as can be done with bichloride; with the former the system receives a larger amount of mercury, but is not as effectual and decided a germicide as the bichloride. The same comparison can be made between albumino-cholo-tannate of mercury and bichloride. In giving 7 1-2 grains a day of the former it is no evidence of its being as effectual as the stronger preparation of the latter, given in half and 1 grain doses.

Dr. L. G. Pedigo, a distinguished member of the profession, with wide experience, and president of the Roanoke Academy of Medicine, believes that 30 to 60 grain doses of calomel given in pneumonia is practically a specific for that disease. He believes, at any rate, that there is very little to be done after it is given, as improvement is prompt and decided. He informed me that one of the Northern hospitals (Roosevelt) learned this fact through a nurse giving a pneumonia patient, by a mistake, 30 grains of calomel, thinking she was administering that amount of bismuth; there was such a marked change in the patient's condition for the better, that the drug was afterwards given as a routine treatment in such cases with the happiest results.

It seems to me that the rational specific treatment in the severe acute infectious and contagious diseases, viz.: tetanus, pyemia, septicemia, meningitis, typhoid, puerperal fever, diphtheria, smallpox, pneumonia, inflammatory rheumatism, typhus fever, scarlet fever, yellow fever, cholera, dysentery, malarial fever, relapsing fever, influenza, dengue, erysipelas, pertussis, varicella, parotiditis, syphilis, glanders, hydrophobia, plague actinomycosis, anthrax, Well's disease, miliary fever, pleurisy and gastro-intestinal diseases, would be to give a 30 grain dose of calomel, commencing the next day bichloride hypodermically, 1-16th to 1-8th grain twice a day, and 1-16th grain by mouth every two hours, continuing this treatment until the disease is controlled. If it is one of the more chronic forms of the disease, viz.: tuberculosis, syphilis, leprosy, etc., give the above treatment for a few days or weeks, and then give the albumino-cholo-tannate for an indefinite time, or as long as may be necessary. With my own experience and a wide clinical experience of noted men with bichloride, it establishes the principle of specific effects of this drug in this important group of diseases. Hence, I feel justified in suggesting this line of treatment in all the above named diseases in which it has not been commonly used as a specific. The most timid doctor need not have any fear in giving this treatment. It will not do the patient any injury. Watch the effect, and as soon as gums swell and teeth become slightly tender, stop the drug for a few days. Resume it as soon as swelling and tenderness disappear.

The hypodermic use of bichloride or any preparation of mercury is troublesome, and will cause some pain and local soreness in the connective tissue, nerves and muscles at the sight of injection. Many patients will object to its use, but with tact and confident assurance that satisfactory results will most likely follow, they will usually submit. The doctor that does not care to carry out this troublesome treatment ought to have some doctor that will carry it out, especially in the severer infections.

It is said that for every disease nature has given a specific remedy for its relief. If such is the case, I believe she has simplified it and given us one remedy—mercury (its synthetical chemical preparations and non-chemical mixtures) as a specific remedy for all germ diseases. It only remains for us to use it with painstaking judgment, observation and care. I cannot but feel sure and certain that the mortality rate will be greatly reduced and thereby humanity greatly benefited by the use of the drug. The ultra-scientific members of the profession—many of whom are skeptical, do not believe in materia medica, but have great confidence in the knife—must remember that the large proportion of humanity have a great aversion to surgery—they depend on the experienced and skilled general practitioner to give relief with drugs. All experienced physicians—those who daily apply the weapons at hand—have a great deal of faith in drugs. He knows and believes

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that many of them are useful and helpful, and that a few can be classed as specifics in a few, if not all, of the diseases of humanity.

Dr. Frank Lydston says: "The physician by drugs can produce anæsthesia, local or general, relieve pain, produce sleep, stimulate or depress the circulation, allay nervous irritability, aid digestion, relieve constipation and hepatic torpor, produce emesis, diaphoresis, and diuresis, antidote malaria and cure syphilis. What wonder that he has confidence in drugs *per se*, while rather skeptical of our knowledge of them" "There must be a remedy, if I only knew," is a brow-contracting reflection to the conscientious practitioner; and so long as there are sick ones to heal, so long will he search for remedies, and so long will he read and believe in the literature that offers therapeutic hope.

I not only appeal to the physicians to wake up and take notice of the specific effect of mercury in germ diseases, but to the surgeon—for many of the dangerous infections have to be treated by him—for those that cannot be relieved by his skilled surgery, he has to resort to drugs as his weapon, and if he has not faith in them, and uses them not, and leaves the patient to his doom, he has not done his duty. The profession of medicine is devoted to the management of infections and pathological lesions caused by infections and injuries. The two great ways of healing them is by the skilful administration of drugs and skilful surgery. All of us are taught both lines of treatment; we have no right to narrow down to one way alone to treat diseases. In the great majority of the diseased conditions both means have to be used if the patient has the chance for his life that he should have. A good physician is a surgeon also; a good surgeon is a physician also. Why not? Are we not taught both means of treating diseased conditions? It is our duty to keep well informed on both means of healing in applying the art of our profession.

6 1-2 *Salem Avenue, S. W.*

DISCUSSION.

DR. M. C. SYCLE, *Richmond, Va.:* We all know that syphilis is a dreadful disease. The mortality in this country is equal, I believe, to tuberculosis, pneumonia or typhoid. I merely want to refer to some of the advantages of the hypodermic method over others. We are all aware of the protiodide inunctions, fumigations and inhalations. The inunction I consider to be splendid, but the disease is one which a great many people dislike for others to know about. In using the inunction the back and legs have to be rubbed, and surely the patient cannot do it for himself. Again, by this method you do not know exactly how much the patient is getting. He will go away and come back with gastro-intestinal disturbance, nauseated and no appetite. In giving mercury hypodermically I used to prefer the bichloride, because you can give larger doses. One grain suspended in liquid albolene, properly injected into the gluteal region, will not cause abscess. The part should be rubbed with alcohol, and I use a 19 gauge, "sub-Q" glass syringe, with a quick thrust into the tissues. It is also more economical to the patient. The patient comes to the office once a week, and he holds you in confidence a great deal better.

Dr. Jones uses a great deal of bichloride. I believe the salicylate is far superior. I have seen as much as 6 grains injected at the Polyclinic Hospital without bad results. Some say they will wait and use it in malignant cases. If it is good in malignant cases, why not start with it? The hypodermic is far superior to other methods of treatment.

DR. L. G. PEDIGO, *Roanoke:* I do not feel competent from experience to discuss the main part of Dr. Jones' paper, i. e., the use of bichloride as a systemic germicide in the treatment of infectious and contagious diseases. The paper as a whole I think is very interesting, notwithstanding that I have dissented from some of the views, and have frankly told the author of the paper that I think he should prune down some of what I regard as extreme views, though he may be right. After all is said, however, I know Dr. Jones to be a man of wide clinical experience and successful practice. I mean that, whether Dr. Jones' views of the use of bichloride appeal to our ideas on first blush or not, we have to respect his clinical experience on the subject. He has tried it extensively, and that is the final test.

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Since he brought in the subject of the antiseptic and germicidal effect of heroic doses of calomel and alluded to some of my work, I will include that. He undertakes to explain some of the well known effects in times past of these large doses on the theory of the germicidal influence of the mild chloride. After thinking the matter over, I believe there is an element of truth in it. It is not the whole thing, of course, We cannot read, however, the history of those very large doses, 40 or 50 grains of calomel, in such diseases as malignant dysentery in the British Indies, Asiatic cholera in the same region, and of membranous croup forty or fifty years ago, cases which we now know were diphtheritis in their nature; we must have the impression that the antiseptic and germicidal influence of calomel was an element in the effects. Some of you know, perhaps, that one of my hobbies is the treatment of acute croupous pneumonia with very large doses of calomel within twenty-four to thirty-six hours of the initial chill. The treatment was first written up by members of the staff of Rose Hospital, who, having seen the results of a drachm of calomel given by a nurse for bismuth, were led to investigate it clinically. I take the liberty of referring to a paper I read before the Medical Society of Virginia as far back as 1889 on that very subject, calomel in acute croupous pneumonia. Several years afterwards I read a paper before the Tri-State Society on the same subject, bringing it up to date. I have never claimed any originality in this whatever. It can be traced back directly to F. D. Lent, in the *New York Medical Journal*, in 1870.

DR. HERMAN E. JONES, *Roanoke:* I am sorry Dr. Pedigo could not bring out what he was going to say. However, I could cite to you a number of cases of typhoid fever treated with bichloride. Every time I get hold of a case and commence the treatment in the majority of them their temperature has come to normal invariably on the seventh day in the morning and less than 100 in the afternoon; by the eighth or ninth day the temperature is normal in the afternoon, and there have been only two cases in which the temperature remained above normal longer than the eleventh day. I go to a case of typhoid fever with just as much confidence of breaking it up as you gentlemen have in antitoxin in diphtheria when you get hold of it early.

I have recently treated two cases of tuberculosis, one of about twelve weeks' standing, another of nine weeks' standing, and both are showing every evidence of recovery. I have a third case under treatment, but it has not been long enough to notice any material change.

I have used it in any number of germ diseases, and have been called up less at night than ever before in my life. It is my firm belief that mercury, the bichloride especially, is a specific in the germ diseases, at least in the ones with which I have had experience.

HYDROTHERAPY.

By J. C. WALTON, M. D., Richmond, Va.

Hydrotherapy includes the application of water in any form, from the solid and fluid to vapor, from ice to steam, externally and internally. Unfortunately, hydrotherapy is, in the lay mind, always associated with cold applications, and a prejudice or fear is engendered of taking cold, rheumatism, etc. The use of hot water as an aseptic in surgery, as a resolvent in gynecology and surgery, in gastro-intestinal and catarrhal diseases, meningitis, rheumatism, etc., has shown it to be as valuable a therapeutic agent as cold water.

Water is the most flexible of all known remedial agents, and when we flect that it can be used at temperatures ranging from 40 to 120 degrees Fahrenheit, and that a change of five degrees in temperature makes a marked difference in its effect, it is apparent what an enormous latitude is offered us in grading its effects on the human system.

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The effects of water are due chiefly to its thermic and mechanical action and its irritating effects on the neuro-vascular cutaneous system. We have three methods of using water, viz.: by changing the temperature, the pressure and the duration of the application. When water is given under a pressure of from twenty to forty pounds its effects are very much enhanced, and the reaction is very much more prompt and decided. Duration is also very important. Dip one hand into water at a temperature of 40 degrees for a minute, remove and dry it, and the skin becomes warm and red and feels pleasant. Dip the other hand into the same water for three minutes, remove and dry it, and the skin is cyanotic, and the hand painful and some time elapses before warmth and comfort are restored. An important point is to avoid the effects of sudden shock or *too rapid* changes from *heat to cold. These changes* should be *very gradual*, and *the attendants* should see that *good* and *prompt reaction* is always obtained.

In neurasthenia, anemias, tuberculosis, chronic malaria and a great variety of chronic diseases a good simple home method is to stand the patient in a vessel of water at 100 degrees Fahrenheit twelve inches deep and rapidly wash him with water at 85 degrees. Reduce daily one degree until down to 60. As soon as the skin becomes fairly red less friction should be used, as the object is to *train* the *organism to produce its own reaction.*

The dripping sheet is the next step in this neuro-vascular training. With the patient standing in a vessel of water at 100 degrees, a linen sheet dipped in water at 75 degrees, is thrown, dripping, around him, enveloping his entire body. The attendant slaps and rubs him vigorously on the outside of the sheet, and on the parts that are reacting well throws basins of water at 65 degrees two or three times, still continuing the slapping and rubbing, shivering being avoided. The parts are then rapidly dried and rubbed until good reaction ensues.

One of the simplest and most useful of hydriatric applications is the cold compress. To make a compress take two to four folds of old linen (cotton does not absorb or retain moisture well), measured to the size and shape so as to conform to the part to be treated. The compress is then wrung out of water at the proper temperature, and is covered with a piece of flannel an inch larger in every direction. The linen covered by the flannel is snugly fitted to the parts. For changing two sets of linen bandages and flannels should be provided.

I will briefly describe how to make chest compresses, as they are superior to all other applications in pneumonia and all other inflammatory diseases of the chest: Cut three folds of linen of a size to fit the entire chest, from the clavicles to the umbilicus, with slips to fit in the axillæ, so as to reach above the clavicles and cover the shoulders. One of the linen compresses is rolled up and soaked in water at 60 degrees; is then wrung out and laid on the flannel-bandage and applied close to the chest and secured by safety pins on the order of a silk jacket. Change the compress every hour until the temperature is below 100 degrees, when it should be discontinued. The water in the basin should be renewed each time, and the compress rinsed off in another water basin before it is rolled up to insure cleanliness and asepsis and thus prevent furuncles. Ordinarily temperature of 60 degrees is used.

In cases of stupor or delirium a still lower temperature is used and a dash of cold water is thrown on the parts before the renewal of each compress. In cases of nervousness, excitability and insomnia a higher temperature than 60 should be used. When the cold or stimulating compress produces chilliness and the patient does not warm up readily it is well to apply cold water with friction before using the compress. The throat compress is a very useful application in tonsilitis and pharyngeal inflammation. The Neptune girdle or abdominal compress is indicated in typhoid fever, gastritis, enterocolitis, appendicitis, peritonitis, etc.

As an antiphlogistic application in the early stages of congestion cold compresses are indicated as long as the circulation is active and the color good. When, however, the parts assume a cyanotic hue and leucocytosis has taken place then change to warm compresses to hasten suppuration, which is then unavoidable. The cold compress *diminishes congestion, retards leucocytosis* and *emigration of the white cells*, while the *warm compress* has just the *opposite effect.*

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Entero-clycis, or washing out the bowels by means of large and slowly injected clysters, medicating or cleansing the bowels and for the treatment of shock, is one of the most valuable therapeutic measures we possess.

Irrigations with a double tube for dysentery is very valuable. They should be continued until the water flows clear from the outflow tube.

In cases of intestinal obstruction the intussusception is generally at the ileo-cecal valve or the sigmoid flexure. *Start with a low pressure, just a trickle,* so as to *accustom the bowels to the pressure,* as the *object is to inject a large quantity of water.* The question of the temperature of the injection is important. Hare and Martin found that water at 65 degrees Fahrenheit lowered the temperature of the body heat 3 degrees in thirty minutes; they also found that water at too high a temperature caused heat stroke, and recommended a temperature of 101 to 103 of saline solution. The writer has had the good fortune to relieve several cases of obstruction by this treatment.

Dr. Pynchon reports a case of intestinal obstruction successfully treated by continued irrigation in a girl of fourteen who had not had an alvine evacuation for three years, and had been eating cheese, crackers, oranges and grapes and swallowing the seeds of the grapes and also chewing gum. The patient was anæthetized and suspended head downwards over a chair. A fountain syringe was filled with water at 110 degrees, and raised to the ceiling with a fall of thirty feet for an adult, as indicated by the experiments of W. E. Forest, who found that the intestine of the adult would stand a pressure of fifteen pounds to the square inch, while in the case of a small child the maximum pressure is nine pounds—the pressure from a column of water being one pound to each two and a half feet of elevation. The effect of the water was augmented by forcible abdominal massage, and two and a half gallons of water were thus driven into the intestine, when there was a violent gushing of water from the patient's mouth, about a gallon escaping in this way. The procedure was then stopped, and when the patient was sufficiently recovered from the anæsthetic to be placed on a slop jar another gallon escaped per rectum. The girl recovered, and had a normal stool on the second day.

That great American clinician, Austin Flint, in 1877, spoke of pneumonia as pneumonic fever, and pointed out its analogy to typhoid fever. Their most striking similarity is that the chief point of attack in both diseases is upon the central nervous system and the resulting toxins. The great desideratum in the management of the pneumonic patient is to enhance further their resisting capacity and to increase the elimination of toxins. This is done most effectively by the judicious use of hydrotherapy along the lines indicated in the treatment of typhoid fever.

Numerous experiments by Winternitz, Baruch, Thayer, and others, by making a blood examination before and after cold applications have invariably found a large increase in the white and red cells and in the hemaglobin. This increase generally remained permanent, and occurred in all cases after cold applications, involving the entire body, with an increase in the blood pressure. Whether this blood increase is due to the improved circulation and the overcoming of conditions of stasis, thus equalizing the circulation and driving out the leucocytes in increased numbers into the blood current from the spleen, liver and bone marrow; or whether there is an increased blood formation from the improved metabolism, the clinical fact is strikingly manifest in the relief of anemia and other conditions of lowered vitality and the increase in the cellular elements of the blood—the oxygen and carbonic acid carriers.

Exposure of the naked body to cold produces a decided increase of oxygen consumption, as does the use of cold water upon the body, and it also increases carbonic acid excretion. After the cold bath or douche, if reaction is good, respiration becomes deeper and more air enters the lungs. For this reason, *all cold hydriatric applications* should be immediately *followed by moderate exercise in the fresh air, as one of the main objects is to increase oxidation.*

Brand and Baruch have shown that, in typhoid fever, it is the *toxemia that kills,* and that the *patient's resisting capacity must be enhanced so as to enable him to overcome this toxemia, especially the damage to the central nervous and circulating centers.* Brand demonstrated long ago that the *cold bath* was *valuable,* not because of its *antithermic effects,* but by its

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sustaining effects upon a crippled nervous system; and that, when properly used, is a prophylactic aginst all the lethal conditions which exist in typhoid fever. Brand taught us the *fallacy* of *treating temperature by the bath or otherwise*, and also taught us the *inestimable value* of *friction* during the bath.

In a recent interesting series of experiments by Professor Baruch at the Vanderbilt Clinic as to the effects of hydrotherapy on blood pressure, especially in arterio-sclerotic conditions, the blood pressure was lowered by warm and raised by cold applications, careful tracings being made in each case by the sphygmograph and sphygmonometer.

A number of physicians have requested me to state the essential differences between the Turkish and Baruch systems of baths. Several years ago I spent the night at a first-class Turkish bath establishment in Philadelphia, as I wished to get rid of a cold. Instead of relief, the cold became rapidly worse, and I very narrowly escaped an attack of pneumonia.

When I began the study of hydrotherapy I asked my preceptor, Dr. Baruch, his opinion of the Turkish and Russian systems of baths. His reply was brief and characteristic. He said: "These systems of baths are all wrong in principle. The main objects of the bath are for its eliminant and tonic effects and for its power to increase the oxygen carrying power of the red corpuscles, thus increasing oxidation."

It is manifestly impossible for a patient to increase his oxidation by breathing the air of a hot, illy ventilated room, saturated with effete and noxious material, and the blood will deteriorate instead of improve under such conditions.

Furthermore the abrupt and sudden changes from heat to cold are very liable to produce shock in delicate individuals, increasing the liability to colds and other troubles. To the business man the loss of time from being compelled to remain indoors for some time after the bath is a serious objection.

The Baruch, or hot-air, system of baths for institutional work—this system of baths being modern and constructed on physiological and scientific principles—is, for health and comfort, in the writer's opinion, superior to all others.

The douche, dressing and hot air rooms should be well lighted and ventilated, the air of the rooms being constantly renewed by a large exhaust fan.

The hot air cabinets for elimination should consist of both steam and electricity, as the electric light cabinet, in addition to its eliminant, has powerful nutritional effects, and in cases of arterio-sclerosis has a most happy effect in reducing and relieving hypertension.

The douche rooms should be provided with a Richter apparatus, as the experience of the writer thoroughly accords with that of Baruch and others, that the Richter is the only apparatus so far constructed that gives the operator perfect control of the temperature and pressure; and as the three cardinal tenets in hydrotherapy relate to the temperature, the pressure, and the duration of the application, a good, reliable apparatus is a *sine qua non;* and the best is none too good.

Next to temperature, pressure is an element of the most importance, and it is desirable to have a pressure of from 10 to 40 pounds always available. A pressure of from 25 to 40 pounds gives a powerful water massage over the spinal and abdominal nerve centers, thus causing a most pleasing sense of exhilaration and a vigorous reaction—training the organism to produce its own reaction, and doing away with the necessity for friction and manual massage.

With the Richter equipment any and every kind of modern hydrotherapy can be administered, and it is absolutely surprising what results can be obtained in the whole domain of pathology—the effects being tonic, eleiminative and alternative. It is an ideal remedy when intelligently used, and as superior to ordinary drying medication as an arc light is to a tallow candle.

The Nauheim baths, for old, intractable, dilated and weak hearts, frequently relieve after all other known remedies have failed.

The perineal douche is specially useful for hemorrhoids and prostatic troubles, and in this connection I will briefly refer to the bidet, which can be conveniently attached to a water closet seat. The bidet should have a nozzle

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calibre of the size of a lead pencil, and a sufficient force of water to excite a sensation of smarting or tingling. It can also be used as a rectal or vaginal injection. The bidet should be movable by means of a handle, so that the stream can be directed against the external genitals—the perineum, anus or surrounding parts—and is indicated in any inflammatory disease of the lower bowel and outlet and of the genito-urinary system, external and internal hemorrhoids, prolapsus ani and recti and eczema of the margins of the anus.

It should be used twice daily, once immediately after stool and again before retiring for the night. Hemorrhoids will frequently disappear after this treatment. Agnew would never operate for piles without first trying the bidet. In prostatic troubles, varicocele and atonic impotence in the male and vulvar pruritus or vaginitis in the female, Dr. J. William White prefers this method to all others, and says that if he had to discard all therapeutic methods but one, in that case, he would retain this one.

Of the different physical agents—hydrotherapy, electrotherapy, phototherapy, massage, hot air, etc.—each is exceedingly useful in its place, and they all have their well-defined and distinct indications; and the intelligent physician should use the modality best suited to the individual condition, with due attention to diet, rest, clothing, exercise and restricted medication, and, above all things, avoid routinism.

"It is an erroneous habit of the physician to trust entirely to experience in accepting a therapeutic agent. Hippocrates has said, 'Art is long; life is short; experience fallacious.' The dark age of medicine was the time when experience alone was the guide to practice. The brilliant achievements of modern medicine are coeval with the rise and progress of an enlightened pathology, and a therapeusis based upon the latter and upon a correct rationale of the action of the remedies applied."

"The superiority of the hot air cabinet bath over the ordinary Turkish bath is evident. The patient is surrounded by hot air in the cabinet, and, the head being free, he breathes cooler air. Not only is he thus enabled to bear higher temperatures, but he is free from the dyspnœa, which is so distressing to many in the hot air chamber of the Turkish bath, and which is doubtless due to a defective supply of oxygen; the latter, being expanded by heat, is not breathed in sufficient quantity to fulfill its physiological function. If oxidation be the chief object of the hot air bath, the cabinet bath must be far superior to the Turkish bath, because it permits a more abundant supply of oxygen as regards the temperature, and thus facilitates oxidation. Besides, the patient is not subjected to the admixture of emanations from the large number of persons who often occupy the hot air chamber simultaneously in the Turkish bath establishments."—"*Hydrotherapy*" (*Baruch*).

I will conclude by reporting a few cases:

Case 1.—Mr. D., aged forty-five. Neuritis of sacral and lumbar plexus; suffering from rheumatism for four years. Since July, 1907, invalided from sciatic neuritis; averaged ¾ gr. morphine daily; treated by physicians, neurologists, osteopaths, etc., and paid the latter over $100; came in a carriage for first two treatments, after that on the street cars; in four weeks could look after his business, and was practically entirely well in six weeks from beginning of treatment. Treatment, wave current, sparks and later Baruch baths and massage. Entire and complete recovery.

Case 2.—Mr. B., aged forty-two. Was taken suddenly three months ago while at Atlantic City with subacute rheumatism. Lost forty pounds in three weeks. Synovitis in left knee; severe pain, ankylosis and hectic fever. His family physician was apprehensive of tuberculosis, as he was losing flesh rapidly and had lost a brother from consumption. Walked with great difficulty on crutches. Treatment, hydrotherapy, electricity and massage; gained thirty pounds in thirty-five days; returned to his business after five weeks' treatment. Complete recovery. This case had every appearance of tuberculosis.

Case 3.—Mr. L., aged sixty-five. Hypertrophy of the heart, apex beat in the axillary line; hypertension 195; large swelling over the epigastrium and transverse colon, which was diagnosed as an enlarged liver and blistered; patient fainted in the lobby; dyspnœa distressing. The abdominal mass disappeared under wave current, 20 in spark gap, enemas and ol ricini (fecal impaction). Heart relieved by high frequency current and Nauheim baths;

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gall *bladder* enlarged and distended with inspissated bile; improvement marked; apex beat is now in the nipple line and swelling and dyspnœa gone, and general condition good.

Case 4.—Mrs. A., aged sixty-one. Arteriosclerosis; tension 180; thickened speech, headache, poor memory, dull and apathetic; ten treatments; under treatment twenty-four days; high frequency currents, and regulation of diet and habits; tension normal, and patient bright and cheerful.

Case 5.—Mr. C., aged fifty-five. Had a severe injury in the lower dorsal region from a fall twelve years ago; pain in the back and occiput; tardy reflexes; low tension; neurasthenic symptoms, digestive disturbances, weakness and insomnia. Treatment, strychnine, wave current and Baruch baths. vastly improved. All symptoms disappeared under two weeks' treatment.

Case 6.—Miss S., aged thirty (trained nurse). July, 1907, patient had a severe attack of cerebro-spinal meningitis of nine weeks' duration. Sequelæ a large bony-like deposit on the base of the skull and the upper part of the spinal column and over the acromial end of the left clavicle, with spasticity of the lower ends of the sterno-cleido muscles; neck very stiff and painful; movements very restricted. Treatment, wave current over parts and static sparks daily. Improvement prompt and striking. Patient's geneeral health, which was much impaired at beginning of treatment, entirely restored, and the deposits nearly gone, with disappearance of all pain and stiffness.

The absorption of these large bony-like deposits with removal of the spasticity of the muscles is very remarkable.

Case 7.—Mr. J., aged seventeen (rheumatic coxalgia). Was confined to room for three months with severe pain in the hip joint, with the limb in splints, as his physician thought there were indications of hip-joint trouble. Hydrotherapy and static electricity. Improvement rapid and constant, so that he was able after two weeks' treatment to walk ten miles. General health much improved and his weight increased seventeen pounds in one month's treatment.

Case 8.—Miss J. Neuritis of both brachial plexuses, the musculo-spirals, the anterior tibials and also tic doloureaux. Treatment, hydrotherapy static electricity, resonator sparks and X-ray. Complete recovery under five weeks' treatment.

Case 9.—Mr. B., aged fifty-three. Rheumatic type, four months ago. Was taken with pains in the chest, extending to the arms, and a tumor about the size of a large hen egg developed in the center of the sternum, extending from the second to the fifth rib; slight discoloration, very painful on pressure and containing some fluid; difficulty in breathing, insomnia and severe pain in the left arm. Pulse 120. Patient was unable to ascend the stairway. The symptoms simulated aortic aneurism. Fluoroscopic examination showed an enlargement in the sternal line; X-ray ten minutes every other day, relief being noticed after the first treatment, and very marked after the third; with entire relief and disappearance of the tumor and all symptoms after the tenth treatment.

Dr. John B. Murphy, in the *Journal of Advanced Therapeutics*, lauds the use of the X-ray not only in tuberculosis of the bones and joints and of the spine, but has had most gratifying results in tumors of the cords, such as granulomas and other enlargements of the cord. He uses the rays to relieve pressure, etc., painful symptoms, and reports some favorable results after the failure of laminectomies.

DISCUSSION.

Dr. C. M. Hazen, *Bon Air:* It is necessary in all of these questions to go back to the physiological side and get our bearings, and though we have all been taught the importance of water, still we forget it sometimes. Water is the great solvent of the body, being, therefore, absolutely necessary. It has a high specific heat, and therefore preserves stability of temperature in the body, which is an absolute necessity. It is one of the active chemical agents. Hydration is as important as oxygenation. The whole process of digestion is one of hydration. Fats are hydrated; carbo-hydrates and proteids are hydrated. They are chemically combined with more or less water. From all these standpoints, then, water is just as important as air. We might perhaps

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suppose that the human body could become accustomed to living with a small amount of air, but not without a large amount of water. That physiological presentation makes it necessary for us to remember the therapeutic uses of water.

One of my former teachers used to say to his class that the reason people got so much benefit when they went to the springs was not on account of something in the water, but because they were drinking water. The use of many of these spring waters round Richmond is found so beneficial because they contain almost no mineral or organic matter whatever, and a person can take large quantities. They call them lithia waters, but there is not enough lithia in one hundred gallons to make a decent dose, and if there was, it would not do them any good. That gives us the basis for rational hydrotherapy. We are all using it, and will have to keep on using it. The subject could be enlarged to an almost unlimited degree.

Water has other therapeutic uses. It will convey heat and hold heat inside or outside of the body. It is one of the best and safest methods of applying heat. Besides, we can add to the mere heat the effect of pressure. Pressure therapy is a different thing from hydrotherapy, but you can combine the two. More important than in the case where intestinal obstruction was removed by exceedingly high pressure, would be its effect on the skin. In the books on hydrotherapy they stumble when they come to physiology; they seem to think it necessary to explain that the skin is some unusual part of the circulation. They talk about the skin heart—I am sure that is a fallacy. They refer to some animals in the skin of which are blood vessels which beat, as in the wings of the bat. That is not true; there is no such thing. The skin circulation is large and important, and that is the main way by which the water escapes which regulates the temperature of the body. The real fact is this: The skin contains a large part of the terminals of the vaso-motor system. There is the key to the proposition. The vaso-motor system is just as important to health and happiness as any other part of the anatomy. The center is acting continuously all the time. Whether we have headache or do not have headache, whether we are comfortable or uncomfortable, depends on the quick reaction of the vaso-motor system. We can affect the system through the terminals in the skin, and one of the very best methods is through water applied to the skin—not mere cleanliness, which is important, but the effect of pressure, warmth or cold, or whatever we desire in this way. It is impossible to go into the technique, but there is no question about the results.

A cold, for instance, what is it? A disturbance of the vaso-motor system. The results are felt on the internal organs. If the throat is weak, we will have a disturbance of the blood supply. Usually, and in most people, the liver feels it more than anything else. Until recently it was a question whether the liver had a vaso-motor system. Of coures, it has; the whole portal circulation has. The lymph vessels have. The liver always feels any disturbance produced by cold. That shows the importance of the external application of water in the various methods for bringing about vaso-motor reflexes and stimulation.

There are two conditions in which there must be a guarded use of this method. In neurasthenia the treatment by water must be carefully applied. I see a great many of these cases who are taking baths, and it is very doubtful at times whether they are not getting worse rather than better. Electrotherapy will take care of itself to some extent, but hydrotherapy should be carefully watched, and should be under medical supervision at all times. Another condition in which it is exceedingly dangerous unless properly directed is arterio-sclerosis and high blood pressure—in all those conditions varying from mere slight toxemia and low liver action up to actual arterio-sclerosis.

DR. J. N. UPSHUR, *Richmond:* If there is anything in the world I am skeptical about, it is mineral waters. Dr. Beale says that people ought to drink a great deal of water, because it goes through the system into all the cracks and crannies and washes out the cobwebs, and I am satisfied, as Dr. Hazen says I suggested some years ago, that when people go to the springs and drink waters, it is the quantity of water and the entire relaxation from care

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that benefits them. I know my friend, Dr. Walton, is a very earnest worker, and I have great regard for him and all he says, but I believe that I was born somewhat in opposition. I believe that lots of the benefits which come from electricity, baths, etc., is because the patient is more or less "hipped," and the matter of suggestion helps him. It is one of those things we cannot always understand, but with many people it is the doctor's personality and magnetism that gets the patient's confidence and helps a great deal. I do not mean that hydrotherapy, electrotherapy, baths, etc., do not do good; I believe they do, but they get credit for more than they do.

As to this tubbing business in typhoid fever, in all due deference, I think it is simply criminal. I never put a patient in a tub in my life to reduce the temperature in typhoid. I believe there is a great deal about temperature that we do not understand. I sponge my patients in bed, and give them what I believe is one of the essentials in typhoid, rest and quiet. Motion means friction, and friction means heat, and the way the patients beg, the way they get blue, and afterwards you have to go to work and rub them—I cannot believe it does good. I have seen a good many cases of typhoid fever, and I believe I have been about as successful as the majority, but I have never held but one view of this tubbing business. I believe it is a hobby a good many men ride, booted and spurred, almost to death, and probably carry the patient along with them.

I know that a good many cases of typhoid fever, in this town at least, come from the bottles, etc., in which the people buy water, because they are afraid of James River water. There is nothing the matter with it if properly filtered. How do we know how much surface drainage there is in bottled waters, or whether the vessels are what they ought to be? If the truth were known, I have no doubt that some, at least, of the cases we have are caused by that bottled and barreled water which is hawked about the streets and sold to the public.

DR. TOM A. WILLIAMS, *Washington, D. C.:* I will only mention two points which have more particularly entered into my own experience.

First, that in all diseases we should eliminate the effect of suggestion, and I agree with Dr. Upshur that many cases benefited by hydrotherapy are really benefited by the suggestion, just as in electrotherapy so markedly. But a careful, skilful neurological diagnosis can eleminate the suggestible, the hysterical patients, and we can then treat them by suggestion, and cure them.

There remains, however, a large class of cases in which there can be no doubt whatever the hydrotherapy has a most important effect independent of any suggestion. I wish to refer to two classes:

First, the cases of toxemic headache, which a neurologist so often sees. I have found that the very simple applications Dr. Baruch recommends of home hydrotherapy are quite adequate, without the elaborate system which Dr. Baruch himself employs. He urges the physician to manufacture his own apparatus in the patient's home as much as possible. The method referred to is the prolonged hot bath, gradually increasing the temperature, without cooling off of the skin. When the skin contains as much heat as is derived from the bath there is no danger of chill. The patient gradually cools off during dressing.

Second, cases of agitation due to so-called mental disease, cases of mania, of delirium. The experience of asylum physicians shows that these are quieted more satisfactorily, usually permanently and less injuriously, by prolonged immersion in the bath, than by hyoscine and the cerebral narcotics, I think the application of that by the general physician to certain of his patients will be of marked benefit. And remember to apply it boldly, for long periods, and without fear. It must be remembered that Dr. Walton's presentation is a very good step in the preliminary study which, followed up, should put most of us in a thoroughly adequate position to perform hydrotherapy. Then we can supplement that knowledge by the advice of such specialists as Dr. Walton. Part of the function of the specialist is to advise the general practitioner in matters which he knows more about, and to which he has devoted more time. I think we owe a great debt to the hydrotherapist.

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DR. JACOB MICHAUX, *Richmond:* I want to emphasize more fully, if possible, what Dr. Upshur has said in regard to the use of the tub. Like Dr. Upshur, I have been afraid of the tub. I suppose it would be hardly fair to say that I am a competent critic, because I have not tried it; but it has not appealed to my judgment, and I think the reasons which have actuated me are sound. They are, that it requires, as Dr. Upshur says, too much exertion. A man with typhoid fever, much less a woman or child, has an irritable nervous system, and to be lowered into a bath is an amount of exertion which, though under ordinary circumstances is small and insignificant, under these is quite an undertaking, and I especially believe that in that class of cases (and it is quite a large one), in which there is manifest disturbance of the nervous system, that practice is highly injurious.

When I want to reduce temperature I sponge with alcohol and water, sometimes with tepid water, and usually by frequent and rather prolonged sponging, I find excellent results. Sometimes the wet sheet has gotten me over a difficulty when I could not reduce temperature by the ordinary method of sponging. I think that an eye to the nervous system in typhoid fever is a very important thing. We should be very careful to guard against excitement of any kind, and that is the controlling reason why I am opposed to it.

DR. E. M. MAGRUDER, *Charlottesville:* In regard to the application of water for high temperature, my preference is decidedly for the wet sheet. I agree with Drs. Upshur and Michaux in regard to the disadvantages of the tub. I prefer the wet sheet for many reasons—the ease of application, the efficiency in reducing temperature, the want of exposure of the patient, which most patients dread. I have found that sponging is very inefficient. It does not reduce temperature sufficiently, not more than 1½ degrees. There is more or less exposure of the patient, otherwise efficiency is sacrified, and it is very fatiguing to the nurse. The way I apply the wet sheet is with a rubber sheet the length of the patient, spread under him, arranged so as to drain toward one edge of the bed. The patient is brought to the edge of the bed and stripped from feet to chin. Lying flat on his back, a sheet dipped in water is tucked from the knees of the patient to his chin. Water is poured over the patient, and the sheet kept saturated. In that way as much water comes in contact with the patient as in the case of the tub. Reduction of temperature, in my experience, is fully as much as with the tub. I have seen many patients fall off to sleep. I prefer tepid water to ice water. I suppose all of us have seen patients scream with fright and nervousness at having a sheet saturated with ice water laid over them. The tepid water seems as efficient, it is agreeable to the patient, and is not attended by any struggling or resistance on the part of the patient. I have kept patients under the wet sheet from a half hour to two weeks without removing it.

In pleuro-pneumonia I have seen the temperature go to 106° if the sheet were removed, while by keeping the patient in the wet pack constantly, the temperature was kept at 102° to 103°. The same thing is applicable in measles, scarlet fever or any disease with high fever.

DR. J. C. WALTON, *Richmond:* In justice to myself, I would advise a good many of these gentlemen to read Dr. Baruch's book. He does not advise ice cold baths in typhoid fever. The plan is to start in with a bath at 90° and reduce it at the rate of 1° daily. The gentlemen have a misconception of what hydrotherapy is and what the Baruch bath is. We do not give the bath to reduce temperature, but for its tonic effects. Drinking water has a mechanical effect. As to psycho-therapy, I think we are justified in using any measures we can to improve the patient's condition. But psycho-therapy does not affect the scales, nor the microscope, nor the sphygmomanometer. We have instruments of precision, and these instruments show that the patient is affected.

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INTER-DEPENDENCE OF PHYSICIANS AND SURGEONS.

By J. ALLISON HODGES, M. D., Richmond, Va.

Clinical Professor of Nervous and Mental Diseases, University College of Medicine, etc.

Naturally, in assuming the affirmative of this subject it is to be presumed that there must be some disparity that would call attention to such a question as the inter-dependence of the members of these two professions.

The science of medicine, as all know, embraces the science of the practice of medicine and of the practice of surgery. Unfortunately, it seems that in the growing extension of the science of medicine, embracing, of course, that of surgery, there has not been that close sympathy, that intimate co-operation between the two branches of the profession that are for the best interests of the advancement of the science of medicine *in toto*, and for the patients resultantly. Now, if this be true, what is the cause of such a disparity?

Unquestionably, to my mind, it is largely due to one factor in the development of the science of medicine, which, while it has probably done more to give us an intimate knowledge of certain lines of the science than anything else, yet has its serious disadvantages. What, then, is this cause? I believe that it can be summed up in the one word "specialism," and I believe, further, that when conscientiously and carefully and thoroughly understood and studied specialism has as many disadvantages, probably more, than it has advantages.

What are some of them? One of them is the undeniable fact that men, unprepared by sufficiency of knowledge and ripe experience, rush too precipitately into the different specialties of medicine, and as a result they are not prepared to cover the broad domain of the science.

It is also a fact that many of the specialists who go into the different branches, while they have added infinitely to our intimate knowledge of these branches, have, because of their limited study in a certain direction, become biased, or, in other words, many of them have become "faddists," and can see nothing outside of their special line of work.

It is also true that there are many "specialists" who are not specialists, and it is not unbecoming in us, I feel, to caution the young men who go so largely and rapidly into the different lines, to prepare themselves well by a thorough study of the whole human anatomy and physiology, as well as pathology of the system, before they limit their work along definite lines.

Again, the physician, as well as the surgeon, naturally has not the ability nor the time to cover the broad expanse even of the field of medicine on the one hand nor of surgery on the other. What is the result? Naturally, you may have a splendidly equipped medical man and yet it is absolutely impossible for him to be skilled in surgical diagnosis. On the other hand, you may have a man highly skilled and equipped in surgery, in surgical knowledge and dexterity, and yet wanting in the broad essentials of the knowledge of the practice of medicine. Consequently, you can understand very easily that if we wish to accomplish the best results there must be an inter-dependence between the physician and surgeon in getting the clearest diagnosis and, resultantly, the best lines of treatment for their patients.

It is a fact, too, that the one on the one side, as well as the one on the other side, becomes biased in his prognosis as well as in his diagnosis; and that oftentimes both the physicians and surgeons become nihilists to the therapeusis of the opposed party, as we may term it, and the physician thinks that the surgeon can accomplish nothing, as the surgeon thinks very often that the physician can accomplish nothing. This is obliged to result in ill effects for the patient, who has certain well-defined rights for which we ought to have the sincerest regard. It is also a fact that neither one, as a rule, follows the case from the bedside observations alone, say, to the operating room, to see whether his diagnosis is confirmed or not, or even sometimes to the

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autopsy table to see whether or not his diagnosis and prognosis were well founded. Surely, then, unless we have co-operative work, which is directed all along the line, and confirmed or not confirmed, we cannot be definite in our diagnosis, and we do not hear from the case in question as much as we should to guide our future treatment.

It is also true that these opposing ideas as to therapeusis held by the medical man and the surgeons lead, at times, to deplorable results, and often to chronic invalidism in a number of patients who could be saved that terrible wreck of their lives in the future. I need not pause here one second to dwell upon this because it is too familiar to you all. I am able, however, to say this, that the exploratory incision, often of the operating surgeon, or the "horseback" guess of the practicing physician, would be largely done away with to-day if we recognized that the physician doesn't know it all just as the surgeon doesn't know it all; and that if they worked hand in hand and shoulder to shoulder for the best interests of their patients they would consult about these cases and not let the inevitable result, which is noticeable to me to-day, follow. What is that? It is this, that in the great number of cases the patient himself these days is getting to be the diagnostician, and he is saying whether his case should be referred to the physician or to the surgeon. Now, I believe we are largely responsible for this very state of affairs. It has been frequently noticed, I am sure, by many of you that when the physician and surgeon work independently of each other, the diagnosis often of the same cases, referred first to the one and then to the other, is different; hence, the skepticism of the patient. Now, I cannot believe that if the true spirit of co-operation existed that this could be true, because if the medical man knows what he should know and the surgical man knows what he should know and each worked in harmony with the other, certainly it would be the same diagnosis in the same case. I believe we are led away too often by the fact that we wish only to determine whether it is mostly a medical case or mostly a surgical case. We are not after an exact diagnosis, and that you know, in the advancement of medicine, is what the specialists were created for, and, acting jointly, should be able to secure.

Frequently because of the non-co-operation of the physician with the surgeon and the surgeon with the physician many of the most important details and facts bearing on the future of the patient as to operation or non-operation are neglected by the surgeon, especially when he overlooks the question of heredity, or when he overlooks the question of individual constitution, of which he can know but little when the case is new to him. When he overlooks, furthermore, the question of the individual temperament, which I believe every surgeon ought to be thoroughly familiar with, so as to know the resistant and non-resistant tendencies of his patient, he is culpable, for I believe that this method of rushing precipitately and hastily into an operation without all of these collateral antecedents which are of such importance to the future of the patient is as often unwarranted as it is unnecessary.

I am aware that laboratory methods in the advancement of our profession have taken a very high place, but I wish to say that from my experience laboratory methods, unaccompanied by close clinical observation, do not make diagnoses that are confirmed upon the operating table; and I repeat, that we should not go mad with the idea that the laboratory tells us everything and that its methods are perfect, but should bring to bear common sense and sound judgment in our analyses of these cases. And besides, it is a fact that simple exploratory incisions are not as harmless as would usually be supposed. Many of you know that even exploratory incisions in certain diseases lead to metastases that are irremediable by the surgeon's knife or by the physician's pills if that incision is left open even for a few days; and another thing, frequently these incisions direct a patient's attention to himself, which is unavailing to the patient, and is, indeed, exceeding harmful in a majority of these cases. All of us will grant, I believe, that intimate pathological knowledge is absolutely necessary in the practice of medicine, and yet I believe it is more important even to the surgeon than to the physician; and while I do not wish to condemn these researches or methods, yet I would urge that they be applied not only to the gross specimen, but to the microscopic specimen, and that final judgment should be made up upon the data elicited only when a well-balanced judgment has been brought to play upon them at the bedside.

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I would add also that the question of the mental impression, both medically and surgically speaking, in many of these cases, when we make a wrong or inexact diagnosis, is of far more importance than we would ordinarily judge. In short, specialism often divides the responsibility and the patient suffers, for neither the physician nor the surgeon feels the interest nor the intimate desire to aid the patient, that both of them combined and working harmoniously together would do. What is the remedy, then? Are physicians and surgeons coming closer together in their work these days? Is either profession capable of treating alone many of the common diseases that come to us? Is it to the patient's best interest, in other words, that this state of affairs should be brought about? Unhesitatingly, I answer affirmatively, for there is often a woeful lack of similarity between the diagnosis of the physician and of the surgeon in the same case, frequently due to lack of a proper knowledge on the part of each as well as proper study of the case in question. The surgeon fails to study his case thoroughly beforehand, and the physician fails to follow his case to the operating table to see whether or not his diagnosis is confirmed by the incision of the surgeon.

I wish to mention very briefly in conclusion that the operative surgeon is, I believe, to-day passing out from being essentially an operative surgeon. The skilful diagnostic surgeon no longer operates for every tumor, benign or not, as it comes, because the tendency of modern surgery is more conservative than ever before. Radicalism is becoming a thing of the past, and is rapidly fading away before the greater and more exact knowledge of the surgeons of to-day. But I do say that because of lack of thorough study of the cases jointly many cases of ovaritis, abdominal neurosis and appendicitis, if you please, are operated upon when they are not those diseases, but are reflexes from some other cause. Furthermore, when we get this exact co-operation we will not make these mistakes, because we will then know, for instance, how much neurotic element there is and how much real pelvic pain. In other words, we can sort out and deal with the significance of pelvic pain, and the physician can help the surgeon in his desire to be conservative and constructive and not radical and destructive.

In conclusion, I believe that all of us, physicians, wish and strive only for the best results for the patient, but in our desire to be one-sided and all-powerful, as it were, we run off too much into specialties, and wander away too far from each other. We should come back and get closer together, both for our own and for the patient's benefit. Many a time the surgeon may make an anatomical cure, may remove a pathological lesion, but even then it is just as necessary and just as essential that the attending physician continue to treat the patient before a permanent cure can be effected. Please remember this, that many of these cases require not only the treatment of the lesion, medically or surgically, but also the treatment of the patient, and to get the best results we must have harmony, we must have co-operation, we must have united interest, both in diagnosis and treatment, on the part of both physician and surgeon.

DISCUSSION.

Dr. Hugh M. Taylor, *Richmond:* This subject is far too important for it to be passed over. I know of no more important subject that has been brought before this Society at this meeting. Far-reaching in its effects, I have listened to Dr. Hodge's paper with a vast deal of pleasure and profit, and agree with him in many things that he has said. I want to ask the question, Who will define the surgeon of to-day? In my opinion, the best definition of a surgeon that has ever been given was given by the greatest mind this country ever produced. I allude to Dr. Senn—"a good doctor who operates." The future of surgery to-day is in the hands of the general practitioner.

Ten or twelve years ago Dr. Senn delivered some of the Noble lectures before the San Francisco Medical Society. The text he took was this danger of the hour—too much specialism. A doctor cannot be a good doctor and do the best that can be done for the patient unless he knows surgery. You cannot do anything for your patient unless you can diagnose, and diagnose in the incipiency of the case. The doctors are too exclusively doctors, and it is equally true that the surgeons are too exclusively surgeons. Have I done the

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best I can for my patient if I have not prepared him for the ordeal, directed him through the psychic influences? The manual part of surgery is not the science of surgery. That interesting paper we listened to last night is nothing new. From Paget, down through Mesmer, to Weir Mitchell, it has developed, "You are getting well," and, finally, "You are well."

DR. GEORGE BEN JOHNSTON, *Richmond:* I think it was Abernathy who said that the unerring test of a good physician is his ability to make a correct diagnosis, and I believe that nothing truer or saner could have been said. The error of our day is to rush into specialties when the individual is unprepared for a specialty. It is a common thing to see young men becoming specialists before the ink is fairly dry on their diplomas. I maintain that no man can become a good specialist until he has an abundant knowledge of general medicine. He must acquire this in well equipped hospitals or must acquire it at the bedside in private practice, and when he becomes a good physician he is then competent to take up the study of a specialty.

Now, every man who proclaims himself a specialist is not a specialist, and a great deal of harm that arises out of the practice of specialism arises out of the circumstance that the men who undertake it are not equipped, not qualified. There is but one way by which a man can qualify himself. That is, after he has acquired an ample groundwork in medicine, to go and apprentice himself, so to speak, to a master. We see young men branching out in the practice of surgery after a common course in college, very often without a hospital experience and taking a post-graduate course of six weeks or three months, buying a lot of glittering instruments, coming home, proclaiming themselves specialists, and getting people to actually believe they are. It is this class of men, whether in surgery, neurology, ophthalmology or any other department of medicine, who is the dangerous man. The true specialist is one of the most useful members of any community, the man who actually knows his work, and, in the slang of the day, "can deliver the goods," is a useful man; but the man who has a mere smattering confuses every condition.

I agree with a great many things Dr. Hodges has said, and so convinced am I that there ought to be an active co-operation between the surgeon and the physician that I call a physician oftener than physicians call me. It may be that I regard them as better doctors than they regard me as a surgeon. I get a great deal of valuable help from the medical man, and have the highest opinion of his capacity, of his skill, and of his usefulness.

Now, I have become to judge a good doctor in a community by the number or surgical cases he refers. If he refers cases of gall-bladder inflammation, typhoid perforation, or cancer of the intestines or stomach, or obscure cases of appendicitis, I know that he is not overlooking pneumonia, pleurisy. empyema and other medical conditions. When I see a physician paying twenty-five or fifty visits a day and never hear of him referring a surgical case I know he is overlooking surgical cases, simply not making diagnoses, and therefore I regard the doctors as the best doctor who refers more surgical cases, because he is making diagnoses. After all, it is a question of diagnosis and then a question of curing.

Now, the object of a surgical operation is not to remove a pathological specimen; the object is to cure the patient, and unless it does it isn't a successful surgical operation. Operation is meant to save life, to prolong life, to relieve suffering, to remove blemishes and correct deformities, and unless the operation does one of these things and that specific thing it is not a successful operation. The mere recovery from a surgical operation does not constitute a successful operation. Now, the judgment of the surgeon, and ofttimes the help of the medical man saves many people from an operation, upon whom an unripe surgeon might operate. And this, I think, is the wisdom of surgical practice, to avoid operations that are not going to accomplish the thing which the operation is designed to accomplish.

DR. EDWARD MCGUIRE, *Richmond:* Once, in talking with the most noted surgeon of this country at the present day, Dr. Mayo, I asked him what he thought of men going into surgical practice without any experience as medical men. He said every surgeon ought to practice medicine ten years before he becomes a surgeon; that he would be a better surgeon. Now, we all know

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that a young man leaving college and going into practice of surgery without any preparation is apt to be mistaken by slight symptoms. Look at the tens of thousands of ovaries that have been removed unnecessarily. I do not mean to say that gynecologists at one time did not do this, because they did. But to-day the gynecologist is exceedingly conservative in regard to pelvic surgery. I have known of instances where the uterus was removed for a little fibroid tumor about as big as the end of my little finger, doing no harm, and not growing. Another case, three months' pregnancy, a small fibroid tumor of the uterus, not growing. Of course, these are extreme cases, and cases in which men who have knowledge of the subject of medicine and have studied it as they should do, would not do. I hope it is but a short time when we will have reached a stage of still more conservatism in surgery. It is growing. There is a time in surgery when every man should be as radical as he knows how to be, and he should not pause in the slightest; but there are different lines if the man is prepared from his experience as a medical man.

DR. HODGES: I thank the gentlemen for their very full and free discussion of this important subject, and am pleased to know that they are so conservative, and I believe that their methods of procedure in the present treatment of this class of cases will accomplish better results than the previous modes in vogue.

I hope that they will use their influence to extend their present views, for I am confident that it will bring about a co-operation between physicians and surgeons that will be to the best interests of both the profession and the patient.

SOME REMARKS ON CORONERS AND THEIR DUTIES.

By JOHN W. BRODNAX, M. D., Manchester, Va.

Coroner City of Manchester; Demonstrator of Anatomy, University College of Medicine, Richmond, Va.

I appreciate the fact that the subject of which this paper treats is of little interest to the profession in general, and that it only appeals to those of you who hold the position of coroner in your respective counties or corporations. Yet I believe the efficiency of this office can be greatly enhanced by a clearer and more definite understanding on the part of the physicians of the powers and duties pertaining to it. For it is upon the physician that the coroner relies for a notification of many cases which come within his province to inquire into, and in which an early investigation is essential for an intelligent and correct conclusion.

As regards coroners' duties, I wish only to speak of what constitute his cases, *i. e.*, what cases should be referred to him for investigation. This function is not clearly expressed in our statute books. The wording in the Code of this State is so ambiguous that the coroner, contenting himself with the knowledge obtained from that source, finds himself frequently in doubt as to whether certain cases coming under his notice should be investigated by him or not.

With a view to a better understanding of the functions of this office, and thus adding to its usefulness as a means for the prevention as well as detection of crime, I have made a careful research into the history and literature relating to the subject, and have embodied in this paper the results of the information thus obtained.

The duties of a coroner can be expressed in a general way as consisting principally of investigating all deaths of persons, whether sudden or otherwise,

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whose manner of taking off creates suspicion that the death might have resulted from foul or other unlawful means.

According to the *American Law Register*, the proper cases for the coroner's office are sudden deaths, violent and unnatural deaths. These are from their nature suspicious, and an inquiry into the circumstances of all such cases should be made by the coroner, although an inquest need not necessarily be held. There is no necessity for a coroner to hold an inquest in any case that he investigates, unless this preliminary investigation reveals facts concerning the death sufficient to create in his mind a reasonable belief that it resulted from some unlawful means.

The decision of the question as to whether an inquest should be held or not is left entirely to the discretion of the coroner, and if there is nothing material to be be gained by it the coroner is not justified in putting his county or corporation to the additional expense of inquest.

As regards sudden deaths, I think it is reasonable to assume that any death occurring within twelve hours from the time the deceased was in his usual health should be considered sudden. It is certainly unexpected, and, consequently, suspicious, and the responsibility on the coroner to make inquiry into it is in no way lessened by the fact that there was a physician present just before or after the death of the person. That the attending physician is equally as capable of determining the cause of the death as the coroner is not questioned. It would be presumptious to claim for the latter any superior knowledge in that respect over the physician; but the coroner is the proper legal authority to decide these cases; the physician is not.

The law assumes that the physician in attendance on a person dying under suspicious circumstances may himself, in some way, be *particeps criminis* until an inquiry by the coroner exonerates him. The impropriety of the attending physician issuing the certificate of death in these cases is evidenced by an act of parliament relating to inquests, which states, in part, that "if any person state on oath that in his or her belief the death of the deceased was caused partly or entirely by the improper or negligent treatment of any medical practitioner, he shall not be allowed to participate in the autopsy on the deceased," etc.

As regards violent deaths, such as murders, suicides, drownings, burnings, etc., these are all recognized as coroners' cases, and need no comment.

Regarding deaths from casualities, Dr. Lee, of Philadelphia, an eminent authority on coroners' laws, says: "Doubtless, in some instances, when the facts of the case are well known beforehand (and under this heading we include the many deaths occurring without medical attention from natural causes which the coroner is usually bound to investigate), an inquest is unnecessary. But as such, we cannot consider the large number of deaths occurring from casualities which it is also the coroner's duty to inquire into, in many cases it being absolutely necessary that there should be such an inquiry instituted as soon as possible after the death of the party; and when a death has been the result of the negligence, either real or apparent, of any firm, company or corporation, the interest of the victim's family, or of his employers seem to render such an investigation an imperative necessity."

In the case of *Lancaster County vs. Dern Long, J. C. P.* the court held "That when death occurs from any violence done to a person by another, although such violence may not immediately kill the party injured, it is still the duty of the coroner to hold an inquest." This opinion having been taken to the Supreme Court upon a writ of error, that tribunal approved it.

From this it would seem that the coroner should investigate all cases of accidental injuries, even when the deceased has not died immediately, but lived several days, and then died from some complication brought on by the injury. For the importance of an investigation is as great then as it would have been had the deceased been killed outright.

Under the head of unnatural deaths I would include those persons who, in their last illness, were unattended by a physician, or in which the physician has not seen the deceased within two weeks prior to the latter's death.

Still births and abortions of unmarried women and deaths of infants of unmarried women, occurring within a few days after their birth, are preeminently coroners' cases, for in these there is a strong suspicion of crime. It is natural to suspect the woman or some interested party guilty of destroy-

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ing offspring born out of wedlock. A coroner has a right to and should insist that all such cases be brought to his notice, and not leave it to the discretional judgment of the physician who may have been in attendance as to whether he should be notified.

Deaths occurring in prisons are also coroners' cases, for it may be presumed that the prisoner possibly died as a result of ill usage on the part of the jailer.

Summing up: The following deaths may be said to be properly in keeping with the law for the coroner to investigate and in which to hold inquests, if, in his discretion, he sees fit:

All sudden deaths, whether violent or otherwise.

All violent deaths, whether deaths occur immediately, or the deceased has survived for some days.

All suspicious or unnatural deaths from whatever cause, such as poisonings, drownings, murders, suicides, burnings, still births of unmarried women, and deaths of infants of unmarried women occurring within a few days after their birth.

Deaths where there has been no attending physician.

Deaths in prison.

In conclusion, I wish to make a few remarks concerning the coroner himself—the requisite qualities he should possess in order to administer in a proper manner the functions of his highly important office. *The American Law Review* says on this subject: "The grave and important powers lodged in the hands of a coroner, combining in his person the function of a medical expert and a judge, is sufficient warrant for a careful selection for the filling of such an office."

A coroner should be a person of high standing in the community. He should be a competent physician who, by an intelligent examination, would, in most cases, be able to decide that the death was natural, and no further examination needful. His knowledge should embrace both the legal and the medical aspects of his office. In order to do justice to his position, he should be well informed on such branches of medicine as are necessary for the conduction of a thorough and scientific legal examination and autopsy. A good knowledge of anatomy, physiology and pathology is essential.

The average medical man has no special fitness for the conduction of a medico-legal examination. He who in the sick room may be a skilful diagnostician or brilliant operator is, unless he has had previous experience, very likely to make a dismal failure when called upon to perform an autopsy. Finally, for the reason that forensic medicine is best learned by experience, the coroner should be selected with a view to his fitness for the office, and his appointment should be permanent in order that the public may have the benefit of the experience of a long tenure of office.

DISCUSSION.

DR. J. N. LEWIS, *Roanoke:* I want to call attention to a few points which embarrass the coroner in the State of Virginia. In a case of poisoning, for instance, the coroner has no authority. Now, the Code allows that the coroner can have an examining physician to make the autopsy. It seems much better for the examining physician to make the autopsy than for the coroner to do so, because the coroner has to take testimony before a jury, and therefore can bring out testimony that could hardly be brought out otherwise. The coroner should be present and direct the autopsy, and should be qualified to make a thorough, accurate and complete examination.

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THE EXISTING RELATIONS BETWEEN THE GENERAL PRACTITIONER OF MEDICINE AND THE SPECIALIST.

By J. WESLEY BOVEE, M. D., Washington, D. C.,

Professor Gynecology, George Washington University, Gynecological Surgeon to Columbia Hospital for Women, etc.

I do not wish to offer any new tnought or set of inflexible rules to govern the members of the great profession of medicine or to dictate the plan to be followed in the conduct of those constituting any portion of it toward those of another portion. That organization and codes of ethics or required conduct are of great importance cannot be gainsaid. Consequently, upon those points I will say but little.

The value of specialization in any and every department of science, and particularly of medical science, has been so long appreciated by every student and observer of progress and development that its necessity for the best results has been generally conceded. If this statment be correct, then the general practitioner should always be ready to avail himself of such special knowledge in any case in which diagnosis or treatment, or both, is not well understood by him. I believe I will not invite contradiction when I state that the duty of the general practitioner is to secure counsel or assistance from the competent specialist whenever in his judgment he has not sufficient skill to bring to his patient the best treatment. Nor can any one take exception to my saying the patient is entitled to the best professional skill if its attainment is practicable. The medical profession has always been too noble to look upon the commercial as the most important aspect in the treatment of the sick.

Perhaps clinical teaching has been a strong agent in stimulating this spirit in the practice of medicine, and has assisted materially in retaining for it its rating as the noblest of all professions. That the patients utilized for clinical teaching are of the dependent and indigent class, and that their conditions receive painstaking and skillful study, as well as the best of treatment, are fortunate conditions, as they exert a powerful influence in promoting in the medical student a spirit of charity and, particularly, the idea that to even the lowly should be accorded the best that is in us.

My conception of this treatment is that it does not mean that the responsibility ends with the skill or ability of the individual physician, but that he, knowing the limitations of his sphere of activity, should, if he believes greater skill can be procured, call such aid or counsel, provided it be practicable. I am confident this rule is commonly followed. And again, in sparsely settled portions of the country remote from medical centers and large cities such assistance would be welcomed, but, for various reasons, is impracticable. In such places are found medical heroes—men who have been obliged to rely largely upon their personal ability. Many times their ingenuity, perhaps born of necessity and devotion to duty, are worthy of greater praise than we can bestow upon them. Unfortunately, not all the patients of such a medical hero fail to retain a lively appreciation of the valuable services thus rendered. But of the physician practicing in a general way in the larger communities such conditions do not obtain.

Skillful physicians in every branch of medicine are readily available. While such who practice in the thickly settled sections have different environments because more quickly impressed by new methods and the latest ideas in medicine and can employ them with greater facility, it is still questionable whether they have as close association with Dame Nature, which, after all, is of the greatest importance in the practice of medicine.

It is to be deprecated that most physicians are dependent upon their practice for means of a livelihood. Though having this sentiment, I would not recommend anything that would lessen the esteem of the world for the medical profession. I firmly believe remuneration for professional service is highly

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proper and essential for the maintenance of the high standing it has in the community. I particulary regret that medical charity to the deserving is not more widely practiced, though in this respect improvement is continually being made. One special advancement in this line is the effort in some communities to discriminate between the worthy and the unworthy applicant for medical charity. I can point with pride to the great work in this direction that was done by the Medical Association of the District of Columbia a few years since and which is in vogue with the Board of Charities.

I do not think the practitioner of general medicine should have no knowledge of special branches in medicine nor that he should abstain entirely from treating patients having such special diseases. Indeed, I have already referred to the necessity of such knowledge and practice among country physicians. But they should have considerable training in each of the special branches now recognized in the profession. I also think they will not commonly meet instances in which it will be impossible or impracticable to have the assistance of the specialist in diagnosis or treatment. The city physician can often apply proper treatment in the milder cases of diseases coming in the category of some of the special branches of medicine, but I would caution him against being incautious. I am not willing, from my personal experience, to concede that the physician in general practice is as competent to diagnose or outline the plan of treatment of such special diseases. The field of medicine is too large for such accomplishment. Not infrequently, however, is he able to follow out successfully the treatment after the diagnosis has been made for him and the treatment planned by the specialist.

After an era of *cacœthes chirurgici* the profession finds itself in danger of considering some special branches as having the alternate name of a branch of surgery as a certain class of surgical operations. The finer points of hygienic treatment are in danger of being forgotten. This is to be deprecated. The proctologist would not consider an operation necessary in every case of hemorrhoids, nor the gynecologist in every case of dysmenorrhea or uterine displacement. In such non-operative cases the specialist, after carefully studying the case, making a diagnosis and outlining the treatment, can and does refer the patient back to the attending physician for application of the treatment.

Two special evils that have resulted from this attempt at specialization by the general practitioner I will mention here. They are, first, delay in malignant disease until the condition is converted from a curable to an incurable one; and, second, the growing custom of every physician to be his own surgeon even in major surgery. It would be unfounded presumption to conclude that were malignant diseases never treated by the general physician they would not reach an incurable stage. Many women, and men as well, suffering from malignant diseases do not seek medical advice until the disease is far advanced. And, again, in many cases malignancy is not detected—perhaps not suspected—until revealed by operation, microscopical examination or recurrence after operation upon growths considered benign in nature. I do know, however, that in my specialty the cases of cancer of the uterus that come to me in an incurable state, and that have been in the care of physicians for months and years are not few. In some of these, examinations have not been made. In others the diagnosis has been "change of life," and in others the patients have been subjected to palliative treatment at early stages when perhaps surgical cure was possible.

The effort of the general practitioner to be a surgeon is an obstruction to the progress of medical science. It is a reversal of the onward tendency. I promptly admit that the newly qualified physician has a certain amount of training in surgery. The sense of sight enters into this training, however, much more than the sense of touch. Many of the beginners in practice have few enough patients, but of these perhaps 90 per cent. are non-surgical. But there is a feeling that fame will follow a few surgical operations, and the itch for surgery overwhelm the interest in the medical cases. This tends to create the class that might be known as multiple specialists. A few scattering operations are performed by them during the first few years of practice. But, I submit, surgical operations must be performed frequently if they would be well done.

I will now refer to two evils of common occurrence among specialists. They are, first, reference by specialists of patients to physicians, sometimes

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other specialists other than those who originally referred the patients to them; and, second, non-special treatment by specialists of referred patients. I am occasionally informed by physicians that they referred patients to Dr. A——, a neurologist, for diagnosis, and an opinion as to treatment. Dr. A——, after examination, refers the patients to Dr. B——, an ophthalmologist, or Dr. C——, a gynecologist, or Dr. D——, an internist, for treatment of gastric or cardiac trouble. The result to the first physician is that he never again sees his patients. Surely the first specialist, Dr. A——, should only have examined the patient, and advised the family physician to have an ophthalmologist, gynecologist, etc., to examine the patient, thus allowing the first physician to select. In the second evil the specialist should clearly see his duty is to refer the patient for non-special treatment to the physician who referred him for special treatment. The specialist who so treats a referred patient must expect the righteous displeasure of the physician referring, for such conduct is unfair. It is not pleasant for the family physician to think that in the specialist he has a competitor for his family practice. He would justly view with alarm the disguise of the specialist.

After commenting upon the advantages of a close and equable relation between specialists and others in our profession, and the faults of both sides that render this relation less fraternal than it should be, I leave the subject for your consideration. This I will do, however, only after making an appeal for a closer relation between the practitioners of the different fields of medicine that they will study methods calculated to produce just and equable results to all concerned. I have not from personal grievances prepared this paper. It has been prompted solely by a desire to have rectified some of these evils as they seemed to me, and I have thought their discussion in the abstract, rather than in specific instances, the best plan.

The Rochambeau.

NECESSITY FOR DIAGNOSIS AS A PRELIMINARY STEP TO GYNECOLOGICAL OPERATIONS.

By CHARLES R. ROBINS, M. D., Richmond, Va.,

Professor of Gynecology, Medical College of Virginia, Gynecologist, Memorial Hospital, Surgeon City Hospital.

The axiomatic character of the title of this paper would seem to leave small room for argument, but however generally it may be accepted as an academic proposition, in practical application it does not always seem to be the guiding principle.

Gynecologic science has suffered much in the past, and doubtless also suffers in the present from the ease from which many of its procedures may be carried out, thus forming a great temptation to the ambitious doctor with surgical aspirations. Unfortunately, the attainment of results is not so easy. The object of this paper is not to criticise or to seek to restrict the practice of this specialty, but to make more and better gynecologists and to point out the necessity for those who practice in this field to fully equip themselves.

My first proposition is that no operation should be undertaken without first making a complete examination and diagnosis. Currettement for abortion is usually considered an easy and safe operation and one that is commonly done by general practitioners, and yet such a simple operation as this would come within this rule. Consider, for instance, ectopic pregnancy. Perhaps 40 per cent. of such cases are diagnosed primarily as early abortions. A currettement under such conditions to control hemorrhage would not only be futile and consume valuable time, but might readily bring on a fatal internal

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hemorrhage. A careful and complete examination establishes at once the pathological condition present and the indications for treatment. So frequently is this mistake made that it is a safe rule to exclude ectopic in every case of apparent abortion before proceeding with treatment. That this is not an idle assertion can be readily verified by the experience of surgeons whose work has brought them any considerable number of ectopic cases.

Accurate diagnosis is the exception and not the rule in gynecological affections, and I have often been impressed with this fact, and have wondered why physicians who have such clear ideas of the nature of other cases which they treat should not be able to present the same excellent results in their diagnosis of gynecological affections. On reflection, however, the reason for this becomes quite apparent. There is, first, a lack of opportunity. The same man who examines many chests and many urines will only occasionally have presented to him the necessity for gynecological examination, and even then, through the fact that the examination is conducted at home, he labors often under unfavorable conditions which would make the examination of an expert unsatisfactory. He thus is not able to acquire the delicacy and acuteness of touch which is absolutely necessary, and which at the same time quiets the fears and resistance of the patient so that she will be docile and pliant, and conveys to the mind of the examiner a picture of the pelvic conditions. I know of few men who have acquired any dexterity, who have not first passed through a more or less protracted period when they were absolutely unable to get any information from their earlier examinations. There is no text-book or school that can teach this manual dexterity and mental adaptability without actual and prolonged experience. The best place to acquire it is in some dispensary with a large clinic.

In addition to this mechanical aspect of the case, we have a much more difficult problem in estimating what, if any, of the conditions found to be present in the pelvis, are the cause of the ill health or discomfort from which the patient complains. We have, all of us, I am sure, seen many cases that complained of most violent symptoms who presented little or no demonstrable pathological lesion, and if this is the case, is it reasonable to expect that the correction of a slight abnormality will alter the character and disposition of a patient? It is at this point that the approach to gynecology from a purely surgical point of view presents its greatest weakness. A woman is not a mere container for delicate organs whose natural tendency is toward displacement, but a human being with organs of digestion, metabolism, secretion and excretion just as found in men, and in addition a highly developed nervous and emotional organism necessary that she may respond to the demands of motherhood. Any one of all of these may become deranged and be responsible for the symptoms of which she complains, and no mere mechanical examination confined to the generative organs can possiby meet the indications for the successful treatment of women. Of all the subjects contained in medicine there is none that has to be approached with the same breadth of view as that relating to the diseases of women, and I know of no way of acquiring this except by some years of practice as a family doctor. The proper gynecologist is a product of evolution. It is only in this way that useless and harmful operations may be avoided. Operations for retrodisplacement of the uterus will not cure rheumatism of the back, or removal of the left ovary chronic constipation, or double ovariotomy hysteria; and I make the plea that the operator shall have acquired the ability to make these and other differentiations before he proceeds to operate, and, above all, that he shall have at least a fair ground for believing that the patient will be benefited before he undertakes any operation.

Perhaps the most difficult problems of all are those in which a demonstrable lesion exists in the pelvis which is associated with general conditions, such as, for instance, neurasthenia. Here the question of what to do and what not to do are often of equal importance, and can only be settled by the ripest and broadest judgment, and a mistake of commission is often of greater consequence than one of commission.

Above all, we should remember that because a woman is a female this is no reason why every ailment she has should have its origin in the pelvis. Men also have backache, and become tired and irritable on exertion. Let us seek for other causes before attacking these much offending and apparently very

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defenseless organs; and I think it quite a safe rule to require proof of their offense before attacking them.

It has often been said that gynecology is no longer a specialty, but merely a branch of surgery. I have never been able to bring myself to believe that woman is nothing more than an operative manikin, and I do not hesitate to say that many women have been made to suffer from this pernicious doctrine, and would have been infinitely better off without the gentle attentions of some enthusiastic but unwise surgeons. As a matter of fact, every specialty rises or falls on the question of diagnosis; and as this relates to women, the question is more than usually complicated because we have to deal not only with the organs peculiar to the sex, but also with their relation to and differentiation from all other affections, and in addition with an emotional and mental equipment essentially different from that in the male. Under such circumstances it must require a little extra study and thought to be able to correctly estimate the cause of the symptoms presented and the proper procedure to effect a cure. To accomplish these aims the highest sort of operative ability is necessary, but this is a means and not an end. The successful gynecologist is not the one who can count the greatest number of operations necessarily, but the one who can count the greatest number of women who have been made well; and if this is his object he will be able to point with as much pride to those upon whom he has not operated as those upon whom he has. It is simply a question of doing the right thing, and the only guide is a proper diagnosis.

DISCUSSION.

Dr. J. W. Bovee, *Washington, D. C.:* I am particularly glad that Dr. Robins makes a plea for gynecology other than surgical. It has been a practice, I think, which has been largely taken up by general surgeons to treat gynecological cases as surgical cases, *i. e.*, a mere mechanical cure for each and every case. I have made the plea many times for the medical side of gynecology, and I am glad to hear Dr. Robins taking that position.

I will go a little further, however, and say that it is very important, when a diagnosis is made, to search for the etiological factors and remedy these. Of course, that will come under the head of treatment, but it is mentioned merely to call your attention to the medical side as well as to the surgical. I was quite pleased with what Dr. Robins said regarding the differential diagnosis between ectopic pregnancy and threatened or incomplete abortion. Cases are by no means rare in which currettage has been done in ectopic pregnancy under a diagnosis of abortion, and the patient subjected to an operation perhaps several weeks afterwards for the condition of ectopic pregnancy.

OBSERVATIONS ON ONE HUNDRED CASES OF OBSTETRICS.

By HERBERT OLD, M. D., Norfolk, Va.

Primiparæ	59
Multiparæ	41
L. O. A.	70
R. O. P.	10
R. O. A.	11
L. O. P.	3
Breech	1
Twins—First, L. O. A.; second, traverse	1
Vertex—Anencephalous monster, 3 Pop cases	4

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Ante-partum Examinations:

Labor occurring within week calculated	33
Labor occurring within week beyond	19
Labor occurring within week earlier	6
Labor occurring within two weeks beyond	1
Labor occurring prematurely	8
Emergency cases not seen before labor	33

Dry labors	16
Membranes ruptured spontaneously	35
Membranes ruptured manually	49
Placenta spontaneous	40
Placenta Credé	58
Placenta Credé, plus chloroform	2

Lacerations of Perineum:	None	65
	First degree	19
	Second degree	16

Puerperium:	Normal	91
	Turned over	2
	Abnormal	7

Abnormal:

Scabies	1
Malaria	2
Caked breasts	1
Nervous temperature	1
Gonorrhœa	1
Delirium for six days (Eclampsia)	1
Sapræmia from infected perineum	1

Normal delivery	67
Forceps	25
Version	4
Breech extraction	2
Pop cases	3

Forceps:

High median	2
Median	5
Low median	16
Low	2

Indications for Forceps:

Incomplete flexion	12
R. O. P. positions	5
Uterine inertia	4
Fetal inertia	1
L. O. P.	1
Eclampsia	1
Induction of labor (albuminuria)	1

Indications for Version:

Obliquely contracted pelvis	2
Accouchment forcé in interest of child	1
Second of twins (transverse)	1

Placenta Prævia 1, 5½ months induc. labor; breech extraction; perforation of after coming head.

Post partum hemorrhage	1	Pop case.	Arrived at house 1 hour after birth of child.
General contracted pelvis	1		
Obliquely contracted pelvis	1	(delivered twice)	

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Modified Champetier de Ribes Balloons — Dry labor..... 2
Induction of labor..... 4

Accouchment Forcé—2 { Eclampsia (emergency case)
Induction of labor with catheters, labor not coming on in 24 hours.

Complications During Pregnancy:

Cystitis and tapeworm	1
Influenza	1
Toxemia	3
Acute rheumatic infection	1
Acute colitis	1
Tapeworm	1
Bacteriæmia and large amount of pus in urine	1

Living mothers 100
Living children 96
Dead children ..... 4= 1 full term congenital atelectasis of right side (autopsy).
1 macerated fetus (5½ months).
1 anencephalous monster (6½ months).
1 inducted labor for albuminuria (8½ months).

In the time allotted me it will be impossible to dwell on more than one phase of such a broad subject; consequently, I shall talk on the management of the third stage of labor, as I consider this to be the most important one with respect to the well-being of the mother, including, as it does, the prevention of hemorrhage and sepsis.

The fundus is held by an assistant from the birth of the child's head until I relieve him. Immediately after the birth of the child a sterile pad is placed over the vulva in order to protect the wounded surfaces and blood clots from any possible contamination. After the cord has been cut and the child removed I look for lacerations and repair them at once, if it is required.

After twenty minutes has elapsed, without the placenta having been expelled, I place one hand on the fundus, draw the cord taut with the other hand, and during a firm contraction I tell the woman to bear down. This often causes the placenta to slip down into the vagina. If the placenta does not come I wait ten minutes, and then go through the same procedure before finally resorting to Credé's method. Among the reported cases the membranes were retained in three, and in each one of these the Credé method was resorted to before thirty minutes had elapsed. Only the most urgent reasons would justify one in employing the Credé method until the third stage had existed thirty minutes, and Credé himself advocates one hour. If I am not successful with the Credé method, I assume that there is some obstruction, most likely a well formed or forming contraction ring. I administer chloroform, employ the Credé method, and the placenta readily slips out. Among the reported cases there were two in which this latter method was successful. I did not have a single manual extraction of the placenta.

The placenta is received in a shallow dish, with a piece of sterile gauze over the edge that is to come in contact with the perineum. As soon as the placenta appears at the vulva it is received by the left hand and gently guided into the dish, which is held on a level with the fourchette; the membranes are spread along the index finger of the left hand, and with the thumb and index finger of the right hand the membranes are gently coaxed out, being first tested at the tip of the finger and working inward. I do not believe in twisting the membranes in the form of a rope, as very thin portions can be readily torn without being detected. A clean sterile pad is now placed over the vulva, and the placenta and membranes are closely examined by inverting the placenta and spreading the membranes up on the forearm. Any adherent clots of blood around the external genitals are removed, and the patient given one teaspoonful of fl. ext. ergot in two ounces of cold water. I myself now

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hold the fundus, and if it is contracting well I allow the nurse to change the gown of the patient, cleanse her thoroughly and arrange the bed. After the periods of contraction become longer than those of relaxation I turn over the fundus to an assistant, who holds it until one hour has elapsed from the expulsion of the placenta and membranes.

The abdominal binder is then applied if the fundus is well contracted, and a teaspoonful of ergot is repeated, if there is much bleeding or if the fundus is not firm. I was not called back to the house in any of my cases for bleeding, and the only case of post partum hemorrhage was one in which I arrived one hour after the birth of the child. I use chloroform very often during the first stage of labor and *ad libitum* during the second stage.

260 Freemason Street.

SOME OBSTETRICAL EXPERIENCES.

By WILLIAM E. ANDERSON, M. D., Farmville, Va.

There have been comparatively few papers on obstetrics presented to this Society since my connection with it. At least ninety-five per cent. of us do obstetrical work, and the remaining five per cent. are called upon to treat some conditions, of either mother or child, connected with the act of parturition.

The rapid progress we have been, and are now, making in the treatment of diseased conditions, both medical and surgical, has concentrated the efforts of the profession and specialized much of its best talent. The medical profession is justly proud of its recent accomplishments, and the public is to be congratulated.

My recent participation in the International Congress on Tuberculosis, held at Washington, D. C., has even more thoroughly convinced me that the profession has the confidence and co-operation of the general public and that they will from now on aid our efforts more intelligently and efficiently than they have done.

Bacteriology, pathology and general scientific research into diseased conditions has taught us much. We, as a profession, must continue to investigate and cure morbid conditions, but I have always felt that I accomplished more when I kept a person from getting sick than when I cured one of sickness. The profession, and people generally, are now devoting more time and attention to just this branch of work.

Preventive medicine, State medicine, sanitary work, to remove the cause of disease and thereby be able to control or prevent it, the study of the origin and the spread of the various contagious and infectious diseases, are all now well up to the front. I have recently been impressed with the fact that many of the best men in the world are exercising their faculties and energies to the full extent in this field.

Parturition, child-birth, the cause for the practice of obstetrics, notwithstanding it sorely taxes the energy and efforts of many of us, and frequently —generally at most inconvenient times and often under adverse circumstances—is the one condition of suffering of which we know well the cause, and yet have no desire to remove it. Approximately one-half of the human race must continue to suffer the pangs of child-birth, notwithstanding the many who are earnest in their efforts and use of various methods, to indulge in the cause and prevent the effect, and notwithstanding the fact that the whole medical profession is so completely united as to the cause of the condition that there is not even a German Koch to stand erect in opposition.

Fortunately, child-birth is not a disease, but a normal function,, and its normality should always be kept in mind and shown the utmost consideration

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and respect. If there must be abnormality, be certain that nature inaugurates it and not the doctor.

Edgar truly says, "Imitation of nature is the key to the management of normal labor. By management is not meant interference, but watchful observation."

As the title of this paper implies, it is my intention to give you some of my obstetrical experiences, which I consider worthy of note.

I have been in general practice for twenty years and have had more than the usual percentage of obstetrical work; consequently feel that I have been confronted with about all the complications and pathological conditions likely to be found in child-birth. The women of the present day are thoroughly progressive, however, and new complications and conditions may at any time be invented; consequently, I am continually on the lookout.

Molar Pregnancy.—The first case I consider worthy of your consideration and attention I came across the third year of my practice—the only one I have seen—a case of *molar pregnancy*, or *hydatiform mole*. I was called fifteen miles into the country at night; found two physicians of wide experience in attendance; they had been with the patient twenty-four hours, but were uncertain as to diagnosis and method of procedure. At the time of my arrival they had about concluded that they had a case of placenta prævia.

Woman twenty-four years old, first pregnancy, and supposed to be about seven months advanced. She had had watery and sanguineous discharges for six weeks. Hemorrhage rather profuse for twenty-four hours before my arrival; patient weak and thoroughly alarmed. On palpation I found the uterus abnormally distended, and on digital examination felt a doughy substance, but could neither outline the fetal head, nor hear the fetal heart. I was satisfied there existed a very unusual condition, and lost no time in making vaginal examination; found os dilated sufficiently to introduce two fingers, but the tissue I came in contact with did not feel like placenta. Woman bleeding too much to admit of delay; consequently I said to the attending physicians, we must empty the womb; showing them at the same time some of the bladder-like, or more correctly, berry-like mass, which I had peeled off by introducing my fingers between it and the uterine wall. This, I at once concluded, was mole, and I continued to remove it by the same process until I could introduce my hand into the womb. I worked on, bringing one handful after another, until I had filled two large sized chambers; afterwards I poured it into a water bucket and filled it within two inches of the top.

The growth extended into the endometrium, and the process of removing it was tedious and tiresome, but I peeled it off and scraped the entire surface with my fingers. Did not curette, because of danger of perforation, due to thinness of uterine walls. After emptying the womb thoroughly, used a very hot intra-uterine antiseptic douche; held womb firmly with hand for some time; gave her hot saline enema, and all the milk she could drink, and advised keeping her under the influence of ergot for several days. I did not visit her again, but she made an uneventful recovery and has since given birth to two healthy children.

Hydatiform mole is a very rare disease, as you know. Madam Boivin, of Paris, found it only once in twenty thousand cases, and Edgar four times in fifteen thousand cases. As to its cause authorities do not agree.

in a young woman, primipara, and no recurrence.

I believe that the primary defect causing the degeneration may be with either ovum or mother. My case was especially peculiar, because it occurred in a young woman, primiparæ, and no recurrence.

Smallpox and Labor.—My next experience to which I shall direct your attention, is one of the most disagreeable I ever had. Mother eight months pregnant, had confluent smallpox, and gave birth to child, which had it at time of birth.

I was first called in to see the father, and found him with well developed case of smallpox. His wife, eight months pregnant, was nursing him, and there were three children in the same room. I promptly vaccinated the mother and the three children, but it was too late; the disease was ahead of me, and on the fourth day they all developed variola.

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I had thirteen cases of variola on hand at the time, and had on duty every available nurse.

This woman continued to nurse her husband, and most of the time the children, as the only other person in the house was an afflicted sister of the father. No one else would go there. At the worst stage of the disease I was called in the night to attend the woman in labor.

I hope none of you have had, or will have, the experience of delivering a baby under such circumstances. Mother, father and three children in one small close room at the worst stage of this miserable disease, and you have to help an innocent babe into the world in the midst of it, without a soul to assist, not even to hand you anything, and then find the baby already has the disease! Five distinct vesicles showed upon the baby's body, and one on the face. He developed twelve or fifteen more in the following two or three days, six of them reaching the pustular stage, forming scales and leaving pits or pock marks.

He is a strong healthy boy at present, nine years old. I have vaccinated him several times, but he contiues immune.

The mother made a slow, but uneventful recovery. This is my only experience with obstetrical smallpox.

Others, who have had more cases, state that usually the pregnancy is interrupted early in the disease, and the child is either born dead or moribund, unless the disease is very mild.

I have seen no record of a living child being born at the pustular stage of confluent smallpox. Kaetenback, however, reports a case of triplets, in which two of the children were born with smallpox, while the third was healthy. A case has also been reported in which the mother was not known to have had variola, while the fetus was born with it.

I am giving you my experience; so shall not discuss these, except to say they might be used as arguments for earlier vaccination, or vaccination in-utero.

Case three: *Head and Shoulder Impaction; Thoracentisis, etc.*—Called in consultation one mile from town, to see a strong, healthy mulatto girl eighteen years old, who had been in labor two and one-half days, primipara. Left shoulder presentation, fourth shoulder position, left scapula posterior. Hand and forearm outside of the vulva. Uterine contractions still very strong, and child forced down low and wedged into the pelvis, so that it was impossible to change the position and deliver, even under chloroform. Attending physician exhausted by continued efforts to do so, and had surrendered. Child dead, and woman had concluded that she soon would be. Position of child such that decapitation could not be performed, and cesarean section out of question.

I advised dissection and delivery by sections, but this the attending physician said the woman could not stand, and he would not agree to it. His remark was, "Let's go home and let her die in peace—no use in killing her." To this I strenuously objected, and told him that I had never left a woman undelivered, and did not believe it justifiable.

It was his case, however, and he being an old gentleman, for whom I had the highest regard, there was nothing else for me to do. I told the girl's father before leaving, I thought she would live through the night, and if he would send for me the next morning I would return. He did so, but the attending physician declined to go with me.

I then got another doctor to go and give the chloroform. On arrival at the cabin we found a crowd of negroes sitting out in front waiting for the woman to die. One of them, a big black buck, who lived on the same farm with the girl and felt a friendly interest in her, had during the night cut off the protruding forearm, near the elbow, with a tobacco knife and hatchet. I abused him for this act and he replied that he "didn't mean no harm, thought he would get part of that child out of the way and may be the other would come on." He probably had an idea of improving the corpse from a cosmetic standpoint.

The splintered bone was an additional interference in attempting to correct the malpresentation.

The girl was thoroughly exhausted and almost pulseless, but uterine contractions started as soon as I again attempted version. Shoulder thoroughly

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impacted; woman and everybody around her begged me to let her alone and let her die easy. This I refused positively to do.

I opened the child's thorax at the most accessible point, promptly removed its contents; then went through the diaphragm and removed the abdominal viscera. This gave me room enough to push the head and shoulders up to the woman's left by placing the fingers of my left hand in the upper part of the tnorax. I found that the amputated arm with the splintered bone end would have to re-enter the womb, so drew the skin and muscles together and pinned them with two safety pins to prevent laceration of mother's parts. I brought down hips of child and then feet, and delivered without further complications.

Strange to say this woman had no sepsis and made good recovery; was a good servant in Farmville for two years afterwards, and then went North About a year after her advent into northern society she died in a New York hospital, undelivered, and from what her sister, who was with her, told me, in similar condition to the one I have described.

She evidently forgot her voluntary vow made in my presence, "that she would never again take any chances, ex consitudinæ.

This woman had a small pelvis, notwithstanding she was apparently a perfectly robust specimen of the mulatto type.

Shoulder presentations occur about once in two hundred cases. I have seen three; the other two were corrected by version, and the children were born living. I saw them earlier than I did the case described; in one I pushed up the shoulder so as to engage the head, and had no further trouble; in the other, I did a bi-polar podalic version.

Case four: *Congenial Hydrocephalus.*—Woman forty years old; seventh confinement. Oldest child had spina bifida, also no sensation in two toes on one foot; one toe frequently sore and practically dead. That ankle and lower leg not perfectly developed; other children living and healthy.

This was the fourth time I attended her in labor. At two of the previous times she had post-partem hemorrhage, and the other one breech presentation; consequently I was looking for trouble, and, expecting almost anything to happen this time, had her under close observation.

She was very uneasy, expecting to die. Had a premonition that this "would certainly be her last time, and the worst of all," and so it proved. I noticed that the abdomen was greatly distended during last month of pregnancy, and she insisted that she was "larger than she had ever been, and would have two."

Abdominal palpation disclosed what felt like a large tumor above pubes, rather than a fœtal head. Cardiac sounds above umbilicus. Membranes ruptured about thirty-six hours before labor pains came on. This alarmed the woman more, as she had "never had that to happen before."

I reassured her; visited her several times, but did nothing to inaugurate labor. Did not even make vaginal examination. When labor was established, vaginal examination revealed cervix sufficiently dilated for me to outline the immensely large head with wide open sutures, through which I could by appropriate manoeuvers obtain fluctation. I carefully palpated the structures of the head, and was positive I could feel the edges of the parietal bones, notwithstanding the wide space between them felt like a bag of water. I was certain of a head presentation, and certain that the head was abnormal, not only in size but in contents.

I had never seen a case of hydrocephalus, but the "feel" somehow felt hydrocephalic to me. Woman now extremely nervous, so much so that I now feared convulsions as a further complication. Partly to control her, and partly because the pains were now increasing, both in frequency and severity, faster than I desired under existing conditions, I put her under the influence of chloroform. She had a weak heart; I had noticed on former occasions that she did not take chloroform well; besides I do not like to give chloroform to women prone to post-partum hemorrhage.

She also expected to die from the chloroform, and told those around her goodbye. Just here, I concluded that two doctors might "get busy" with this patient, and had a hurried 'phone message sent for one. That doctor was out, and another was promptly called. It seemed to me that he was

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slow appearing; so having had my instruments prepared I perforated the child's head without further delay. The cerebro-spinal fluid gushed out, an immense quantity of it, and the fetal head collapsed. No brain tissue escaped and I thought of the possibility of the child being born alive, so pushed the perforator to base of the skull and did some vigorous twisting in the medulla locality. Thought now I could see "day breaking"; it proved a very slow dawn; the light in the east, and in the pelvis, was very dim for what seemed to me at least half an hour. This woman's condition was bad. Before putting her under chloroform and perforating the fetal head, I had feared rupture of the uterus; now I feared hemorrhage. She was completely relaxed, womb and all, and the child's head was apparently completely collapsed; I grasped that plethoric scalp tissue and expected to pull the baby out; it would not come. The scalp was so bulky and the bones so large, that notwithstanding their thinness they just would not come through; I introduced a blunt hook into the head, peeled the parietal bones out of scalp, and removed them separately.

With the cranioclast I now completed the delivery, and drew a long breath. This child did not have a handful of brain tissue in all; that was in a thin, rather firm layer, and poorly developed. The spine was very imperfect, open entirely for a space of three inches about middle, and two inches near lower end; cord exposed and evidently defective; shoulders and chest rather large, but limbs small and poorly developed.

Mother lost considerable blood, due to general relaxation and absence of contractile power of uterus. She recovered and is now in good health. I am grateful that her age precludes the probability of any similar performance in the future.

I have had quite a number of other interesting experiences, but the length of this paper will not permit my giving you more in detail.

My father, who practiced medicine over fifty years, several times told me that I was one of the "luckiest practitioners he had ever known." I begin to think that true, in regard to my obstetrical work, at least. I have delivered over four hundred women, have not used forceps over twenty times, have done five craniotomies (in all of which the woman's life was seriously and immediately threatened); have had fourteen breach presentations; have, as previously stated, contended with about all the various forms of dystocia; but have not yet lost one of my own patients in child-birth, or any disease connected with it.

You will please excuse the personal bouquet and allow me to "knock on wood." I have delivered seven pairs of twins, twelve of the children born living. Delivered one pair of twins in a fashionable home, when not a person was in the house but the woman and myself. I got "busy." Absence of assistance was due to the fact that labor came on unexpectedly in the night; servants were away; the man came for me and from his account of what was going on I sent him right on after nurse, and I hurried to the home. On arrival, found I had no time even to call in next door neighbors. Before father or nurse either appeared, both babies were lying on the bed wrapped up, and the woman was laughing at the situation.

In conclusion, I wish to say that I believe the use of forceps in normal labor is becoming too fashionable. I see the evil effects frequently. Injuries are often done mother or child, ofttimes both, by the indiscreet, unskillful and unjustifiable use of forceps. Have patience and exercise watchful observation. Use practical sense and good judgment; act promptly when necessary, but not before, and all will be well.

In fact, as I have often stated in meetings of this Society, much of the trouble incident to labor cases may be avoided by intelligent treatment in advance. The conditions to be confronted in cases of this character are entirely natural, and the function a normal one. In the simplest states of society, where the physical structure and condition of the woman is not affected by conditions due to civilization, child-birth is rarely accompanied by serious difficulty or great complications. The purpose should be, therefore, during the period of several months preceding confinement. to prepare the woman's system to perform its normal functions with the least possible strain; to put the system and secretions in good order, and to tone up, as

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far as possible, the muscular system. By this course, taken in advance of confinement, the difficulties of child-birth can be greatly reduced, and the recovery of the patient facilitated.

DISCUSSION.

DR. JOHN F. WINN, *Richmond:* I want to call attention to the point brought out by Dr. Anderson in closing—the importance of the physician getting in close touch with the patient, to encourage early engagement of the physician, in order that he may keep himself well posted in regard to the pregnant condition, more especially with reference to the kidneys. I am not one of those who believe that all cases of eclampsia or toxemia in the broader sense can be prevented, but I do believe that the majority of such cases of toxemia are largely preventable, provided the physician keeps that woman in proper condition and is able to recognize any deviation from the normal. On one occasion it was facetiously remarked that if we educated our people in regard to the toxemia of pregnancy, we would have all our patients hysterically confined. My answer was that I had been following that plan for twelve or fifteen years, and had never had cause to regret the step I had taken. Not that I told my patients what the symptoms of toxemia are; not that I seek to frighten the patient, but I impress upon them the importance of bringing to my office at stated times, not occasionally, at some particular day of the week, a specific quantity of urine (Oz. 4, usually), so that I could thereby more impress the patient with the importance of keeping her doctor informed.

So much am I impressed with the importance of the subject that I had the printer strike off for me a few points which I always give patients for whom I am engaged. The first page has reference to the hygiene of pregnancy—rest, exercise, avoidance of cold, etc.; the importance of proper diet, daily free movement of the bowels, and reference to the sending of specimens of urine, as follows: Send to my office on the first Tuesday morning; of each month a 4 oz. bottle of mixed urine, and beginning with the seventh month, send the sample on the first and second Tuesday morning; and during the last month, every Tuesday morning. Measure the quantity of urine for the 24 hours preceding sending the specimen, and report to me. Keep a memorandum of each measurement in order that you may detect any reduction in the total daily quantity, and do not fail to send your name with the bottle. The next paragraph has reference to the care of the nipple, etc. Further—if any of the following symptoms are observed during pregnancy, it is important that you report them at once, in order that you may be placed upon proper diet and treatment. First, a decided falling off in the daily quantity of urine; second, severe or persistent headache; third, disturbance of vision, specks before the eyes, etc.; fourth, vertigo or dizziness; fifth, vomiting or copious spitting of saliva; sixth, swelling of the feet or face; seventh, persistent constipation; eighth, jaundice; ninth, severe itching in any part of the body; tenth, loss of blood, however slight. Should there ever be the slightest loss of blood, go to bed and keep quiet.

I have yet to see a case that has been hysterically confined.

DR. J. N. UPSHUR, *Richmond:* I had a case of hydrocephalus, which, in some respects was unique, and I felt responsible indirectly for the death of this patient. It was her second child. Let me premise what I have to say by saying that this girl, strong, healthy and robust was married to a man who had been more dissipated than he should have been, and previous to his marriage, had been operated on for stricture. As a result of the operation, promptly following his marriage, his wife conceived. She had an uneventful pregnancy, went on to term and was delivered with forceps after protracted and difficult labor. She made a good recovery. Some four years after the delivery of this child, the woman came to me, asking if I could not do something for her husband, that he was in a desperate condition, passing his water almost drop by drop. He was treated, made good recovery, and following his treatment for stricture, came the second pregnancy. I always regretted that I did anything for his stricture, for he was as trifling, good-

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for-nothing a white man as I have ever seen. When labor set in, according to the best calculations, she was some three weeks late. Examination showed a breech presentation. The fetus was delivered up to the neck. I tried to turn out the head according to the most approved plan, but couldn't budge it. The infant had spina bifida and club foot. I soon discovered that it had an enormous head. The pains wore off. I sent for assistance and a perforator. When the doctor came he asked if I desired him to turn out this head. He approached it with confidence, but was unable to do it. While waiting for assistance, this girl remarked to me in a very quiet voice, as if perfectly convinced, "Doctor, I am going to die to-day." I hooted at the idea A little while later she called out that she had such a violent pain in the lower part of her abdomen. It lasted four or five minutes and passed off. I perforated the head at the occipito-parietal suture. It was an enormous head and a large amount of water was discharged, and even then it was with difficulty that this hydrocephalic head was delivered. There was extensive laceration of the perineum as a result, even though the utmost care was exercised. The perineum was sewed up, and making a careful examination before leaving, it seemed that the patient was doing very well. She was delivered about half-past ten in the morning; I left the house after one o'clock. The only thing noticeable was that the patient seemed a little pallid, attributable to the unusual amount of shock. At that time the uterus was well contracted. I was called to see her again before three, and reached the house a half hour after the summons. When I arrived the patient was dead. She had had a slight hemorrhage, which was the explanation of the pain, and there was an extensive laceration on the anterior wall of the uterus. It was the only instance I have ever had of this kind.

Dr. George Ross, *Richmond:* Dr. Anderson's paper was a practical, common-sense paper, which we may all have the opportunity of using in our daily practice. We cannot be too careful in observing what one of the old authors emphasized—meddlesome mid-wifery is bad.

I have had two cases of decapitation, and undelivered head and death. Both of those cases were seen by men conspicuous for their integrity, intelligence, sincerity and everything. Each of those cases died with the body delivered, and the head retained. One of them was not detached, because I could not, with the assistance of this gentleman, deliver the head. It was so large, or, at any rate, so immovable, that we could not get it out. Any sort of traction would have torn the neck away from the head.

I do not believe we can be too careful in impressing the importance of getting the patient *ab initio*. I do not know that I conform to all that Dr. Winn said with reference to concentrating the mind of the patient upon what may occur. I am careful in giving instructions, but do not call the attention of the patient to it. Cleanliness here as elsewhere, is next to godliness. Do not make too many examinations—a single examination for diagnostic purposes, and then wait. I always use chloroform. I have used in the last two years Abbot's tablet in three or four cases, and in one of those cases I was rather alarmed. The others I think required less chloroform, and were somewhat satisfactory. Beyond that I am not prepared to recommend Abbot's tablets.

Dr. Lewis Holladay, *Orange:* In about 250 cases I have had shoulder presentation only once. In that case the child was far advanced in decomposition, and I soon wrung the arm off. I was able to decapitate the child and finally to deliver the body. I won't refer to the difficulty I had in angling for that head floating around in there. The woman had been steeped in filth all her life and was apparently immune to sepsis.

Dr. George Tucker Harrison, *New York, N. Y.:* I do not think any man can be a good surgeon in the highest sense of the word unless he is a good physician. In New York City there are some men who practice nothing but obstetrics. My contention in regard to specialists is that a man who is a strict specialist is not fit to practice his specialty, especially in regard to obstetrics. Modern obstetrics is becoming more and more surgical, and no

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man is fit to practice obstetrics unless he is a surgeon. One of the greatest advances in modern surgery is the operation of vaginal Cesarean section. A deep incision is made on each side of the vagina so as to open up the vagina to such an extent that you can run your fist in it. I had a case recently in which, after opening up the vagina in this way, I made an incision in the anterior wall, and then one in the posterior wall, of the uterus, and delivered the child easily, saving the life of both mother and child. The child was delivered in ten minutes after beginning the operation; the mother made a perfect recovery. The operation is applicable in some cases, though rarely, of placenta previa. It is not indicated, of course, in a narrow pelvis, but the classical Cesarean section is indicated when you have a child that cannot be delivered through the natural channel. No man can perform that operation unless he is a good surgeon; hence my contention that modern obstetrics is becoming more and more surgical.

I think we are more apt to be too conservative than too radical. The great thing to know is when to use the forceps, and when not to. There is more nonsensical use of the forceps in cases of occipito-posterior than in any other part of obstetrics. The forceps are not to be used until the head is fixed in the pelvis. I never like to hear of "high forceps," because it means that the forceps were applied where they were not indicated. When the head is in the superior strait and the forceps put on, you diminish the wrong diameter, and enlarge those that ought not to be. It is contrary to sound physics. When version is indicated, the forceps are contraindicated, and when forceps are indicated, the time for version is past. Above all, understand how to treat these occipito-posterior cases: they are constantly recurring.

DR. J. N. UPSHUR, *Richmond:* How much hemorrhage was there in that operation? In lacerations of the vagina much less than your incision, hemorrhage is sometimes exceedingly troublesome.

DR. HARRISON: There was much less than you would expect. There is no danger when you go through the anterior and posterior wall, avoiding the arteries entirely. The posterior retractor will control hemorrhage by pressure.

DR. GEORGE ROSS, *Richmond:* I have always expressed my admiration for surgery, and maintained that a man should be an all-round man. He should be competent to do surgery, and to leave it undone. I have never yet seen a case of vaginal delivery of a matured child, and I am not prepared to say that I would endorse under any circumstances what Dr. Harrison did. I would rather do a Cesarean section. In one case in which, after examination, I stated as my opinion that the woman could not be delivered without Cesarean section, several gentlemen present agreed with me. Upon re-examination I decided that she could be delivered, and I delivered her in ten minutes by forceps.

In another case I delivered the woman by forceps after one of the best obstetricians in this city had put on forceps twenty times. Why? One law is absolutely unchangeable. The axis of the womb and the axis of the pelvis are in the same line. No rotation takes place until the head of the child has reached the pelvic floor. He had tried to pull that head through the pubes. I pulled downward and backward in the line of the superior strait and womb, and as soon as the head struck the floor of the perineum, had no trouble.

DR. J. E. COPELAND, *Round Hill:* We do not do this operation, and yet we get along. We apply forceps and get through with them some way.

When you have a case of retarded labor dystocia, or anything of that kind where the womb does not dilate properly, it is important to bleed the patient well. It may be a little old fogy, but I have seen good results from it.

DR. W. F. CREASY, *Newport News:* Dr. Anderson's paper recalls a case I had some years ago when dealing with the smallpox situation in Newport News. One night I was called to see a patient with smallpox, and on the way there was met by another physician who informed me that it was not only

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a case of smallpox (there were several in the family), but that this woman who had smallpox was also in labor. So I went back home and prepared myself for a case of labor and a case of smallpox—in fact four cases of smallpox in the house. When I got to the house the woman was not only in labor but in convulsions. The labor was nearly full term, although I was never able exactly to determine the time. We put the woman to sleep at once, and dilated, and contrary to my friend's view, used high forceps, and finally delivered her. Dr. Anderson called my attention to this when he stated that he had never seen a child live when the woman was in the pustular stage of smallpox. That was the condition of affairs in this case. The child also had the eruption of smallpox. The mother recovered, and the child is living to-day.

To my mind, also, this case illustrates that there are times when the high forceps are very necessary. I cannot imagine in this case how the woman could have been delivered in any other way. Surely in this case you would not have used Cesarean section. It is true that after dilating the cervix (it was done under complete anæsthesia and with the fingers), after we had gotten it dilated sufficiently to introduce the forceps, we delivered her without a great deal of trouble.

DR. WILLIAM E. ANDERSON, *Farmville* (concluding the discussion): If there are any gentlemen here who have had cases of hydatid mole I should be glad if they will write me about it. I have been watching for another for seventeen years.

A FETUS REMOVED FROM THE ABDOMINAL CAVITY AFTER THREE YEARS STANDING.

By E. R. HART, M. D., Suffolk, Va.

Unfortunately the diagnosis of an unruptured, extra-uterine pregnancy is seldom made, as the symptoms to which it gives rise are usually too slight to cause the patient to consult a physician. When such diagnosis is made, it is usually based upon finding an unilateral tubal tumor in a patient presenting the usual subjective and objective symptoms of early pregnancy—especially if she has been sterile for a number of years, or if a long interval has elapsed since her last pregnancy—with the uterus enlarged and soft and the tubal tumor soft and doughy, and roughly corresponding in size to the supposed duration of pregnancy. But the experience of the majority of operators, after making such a diagnosis, is to find at operation that the tumor is invariably of some other nature. After rupture has taken place, the extreme condition of our patient, together with the history and physical findings, usually render the diagnosis unmistakable; however, some cases pass unrecognized and the patient either dies of shock, hemorrhage, sepsis, or the fetus may become digested, leaving only a mass filled with blood, as sometimes found at operation.

When the fetus, however, attains a certain size, it cannot be absorbed in this manner, and thus undergoes certain changes, i. e., it may become mummified, skeletized, a lithopedion formation, or an adepscere formation.

In mummification, the fluid portions of the fetus are gradually absorbed and its internal organs converted into a soft, pulpy mass, which is gradually absorbed; so eventually nothing is left except the skeleton, whose bones are held together by a dry shriveled skin.

If infection does not occur, the mummified fetus, or the membranes surrounding it, or both, become covered by a coating of calcareous material and a stricture results, to which the name lithopedion is generally applied.

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A number of such cases are on record. Among the first, was that which occurred in the town of Sens in 1601, and was known as lithopedion of Sens.

Likewise in 1720 Leinzell obtained one from an autopsy upon a woman seventy-four years old, who had carried it for forty-eight years—during which time she had had several children.

A number of cases are now on record in which the lithopedion has been carried from thirty to fifty years as a harmless foreign body, except at labor, when it may give rise to a partial obstruction of the pelvic outlet.

In some cases, suppuration of the sac takes place before petrification begins and gradually spreads to the fetus, liquefying all the soft parts, leaving only the bones, which sometimes penetrate the walls of the bladder, vagina or intestines and are expelled in this way.

In exceptional cases the fetus becomes converted into a yellowish, greasy mass, supposed to be ammonical soap.

The speciman that I have here, was one removed from the abdominal cavity of a young woman in 1907—M—— R——, colored, from North Caroline; age, twenty-seven; married, six years; no children; father and mother living and healthy; one brother living; no sisters.

Her health had always been good until about four years ago, when the present trouble began, with a sudden sharp pain in the right side in the region of the liver, which lasted for several hours, followed in two or three days by a rise of temperature, which persisted for five weeks, during which time she was very ill. As there was no suspicion of pregnancy, the diagnosis was not made, and the woman recovered from the attack.

In a few weeks she noticed her abdomen was enlarging and in two or three months began to feel some movement; still not suspecting pregnancy, thought she had a tumor.

The movements and enlargements continued to increase for four or five months, when it stopped and the abdomen began to recede. She continued in this condition for three years and when I saw her I found a fairly well nourished and apparently healthy woman, complaining only of weight and gaseous distensions in her abdomen. On examination of the abdomen, I found a large tumor, occupying the greater portion of the abdominal cavity, extending from about two and one-half inches above the symphysis upwards under the lower ribs and apparently attached to the liver, as no line of distinction could be felt on that side. The anterior surface was smooth and hard. Laterally, irregularities could be felt, which proved to be the extremities.

Vaginal examination revealed a normal uterus displaced downward, right tube and ovary normal, but in the region of the left tube could be felt a hard mass.

Under the X-ray the mass appeared as a solid, dense tumor with no outlines of bones.

Operation.—A medium incision was made and enlarged from the ensiform cartilage to the symphysis. The peritoneum was very hard and fibrous and firmly adherent to the mass for its full extent and had to be dissected off. The upper portion was adherent to the lower under surface of the liver, the stomach and the transverse colon, by which it was suspended.

After freeing all adhesions, the mass removed proved to be as the specimen shows. On examining the pelvis I found the placenta firmly attached to the ruptured left tube; this with the tube was removed. On closing the peritoneum, I found it necessary to remove a strip from either side of the incision about one and a half inches wide, as it appeared extremely hard and devoid of circulation. Otherwise the wound was closed in the usual way, and the woman, making an uneventful recovery, left the hospital in about three weeks. The last report of her was received about three weeks ago, and she was in fine condition and performing her daily duties.

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ECTOPIC PREGNANCY—THE DEFERRED OPERATION.

By EDWARD T. HARGRAVE, M. D., Norfolk, Va.

Ten years ago, a distinguished surgeon is said to have stated to his class that he wanted every man graduated from his college to feel it his duty to operate immediately for three conditions, namely: strangulated hernia, fulminating appendicitis and ruptured extra-uterine pregnancy.

While there appears to be little change in opinion as to the necessity for immediate operation in strangulated hernia and fulminating appendicitis, surgeons are at least divided upon the advisability of immediate operation in cases of ruptured extra-uterine pregnancy. In fact, the recent literature seems to favor the point that it is safer in the majority of cases for the majority of operators to defer operation. Generally, active hemorrhage has ceased when a case of ruptured extra-uterine pregnancy is first seen, and many of these cases terminate fatally if subjected to immediate operation, death being traced to the operation and anæsthetic. The great majority of ectopic pregnancies occur in the ampullary portion of the tube, and terminate by tubal abortion and not by rupture of the walls. Even in cases of rupture of the walls, the larger arteries are not involved, the hemorrhage being from the smaller vessels.

Reed, Williams, Vineberg, Storer, Hirst and Ladinski favor immediate operation. Jardine[1] favors immediate operation if hemorrhage is going on; "but if the hemorrhage has ceased and the patient is so collapsed that the shock of an operation would kill her, she should be freely stimulated, and have a large saline infusion, to rally her before operating."

I wish to call attention to the brilliant results of Ladinski,[2] who believes in operating immediately in every case, regardless of the condition of the patient. He reports 107 cases, with but one death, and that was due to "tertiary hemorrhage three days after operation, in an absolutely undoubted case of hemophilia."

He states: "Hemorrhage from rupture I regarded in the same light as hemorrhage from any other source, and have always followed the universally recognized axiom of surgery, that the hemorrhage should be checked as soon as possible. I have, therefore, repeatedly operated where there was no pulse at the radial, and at times the operation was done when the patient was absolutely unconscious and didn't require anæsthesia, either general or local." He admits, however, that but for the venous infusion, many of his cases would have perished, and next to immediate operation, he regards it as the greatest life saving measure at our disposal. In discussing statistics he very properly calls attention to the fact that there is no question as to the correctness of the diagnosis in cases operated upon, while those not operated upon may not be ectopic pregnancy, and it is unfair to compare his statistics with those not confirmed by operation or autopsy. I am persuaded that Ladinski's brilliant results were due in a large measure to very early operations, rapidity, skill, and in the majority of cases, good facilities and trained assistants. If every operator could operate under the same conditions and possessed his skill, I believe that immediate operation would be indicated. But, many cases are first seen in remote localities by men who are not accustomed to performing major operations in the abdomen, and it requires several hours, at best, to secure even one assistant; and with no equipment at hand, I believe it would be wrong as well as dangerous to expose the patient to the risk of an immediate operation under such circumstances. Practically all surgeons advise immediate operation if the condition of the woman is good, and if she can be operated upon amid proper surroundings, but the mere presence of a ruptured tube is no indication for immediate operation.

[1] Clinical Obstetrics, Jardine.

[2] Ladinski, American Journal of Obstetrics, January, 1908.

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Newell, Noble, Ahlfeld, Simpson and Robb advise the deferred operation, unless the patient is growing rapidly worse. Dr. Howard A. Kelly replied to the below-mentioned query as indicated.

1. Broadly speaking, do you favor the immediate or deferred operation in the hands of the occasional operator without skilled assistants? Answer: Would advise waiting.

2. What is your own method of procedure in cases of rupture with severe symptoms of shock and hemorrhage? Answer: If patient is in hospital I operate, merely to check point of hemorrhage; afterwards give salt solution, and if necessary blood transfusion.

Hunter Robb[3] conducted thirty-one experiments on dogs, without a single death from hemorrhage. The experiments were divided as follows:

1. Division of the uterine and ovarian vessels.

2. Division of the uterine vessels producing shock. Secondary operation on dog while in condition of shock.

3. Division of the uterine vessels and observations on the blood pressure and hemoglobin.

4. Division of the uterine vessels and observation on the pulse respiration and hemoglobin, with speceial reference to the time of the clotting of the blood.

5. Division of the vessels, observation on the pulse, respiration and hemoglobin before and after bandaging and before and after applying weight to the lower abdomen.

6. Division of the uterine vessels with the dog in the upright position; observations on the pulse, respiration and hemoglobin.

He concludes that the intra-abdominal hemorrhage, such as is met with in women suffering from collapse after the rupture of an ectopic gestation, is not sufficient in itself to cause a fatal termination in these cases. He thinks that death is mainly caused by shock, which may be increased by various procedures. The hemorrhage *per se* is rarely, if ever, the sole cause of death. His experiments show that clotting probably occurs within fifteen to twenty minutes after the vessels have been cut; and that subcutaneous injections of normal salt solution in all probability do not cause a renewal of the hemorrhage. But manipulation of the tissues by disturbing the clot causes the bleeding to start up again, and may be mistaken for a continuing hemorrhage. He assumes that he made the tests sufficiently severe to more than equalize the factor of resistance to the loss of blood in the dog as compared with that of human being under fairly similar conditions. His experiments certainly teach us that when called to attend a case of supposed ruptured ectopic pregnancy, vaginal examinations should be conducted with great gentleness, and in many cases it is safer to rely on the history and symptoms of shock and internal hemorrhage. Robb reports twenty cases of ruptured ectopic pregnancy, and no case was operated upon during the first day of admission to hospital. The average stay before operation was five days. Only one death occurred, and that was due to volvulus and intestinal adhesion.

Simpson[4] asserts that more patients can be saved by a delayed operation than by immediate intervention, and from an experience of nearly one hundred cases of ectopic gestation, he believes that in the presence of the more grave type of hemorrhage it is decidedly unwise to depress the patient further by an immediate operation.

He advocates the expectant treatment as follows: Slight elevation of foot of bed, the application of external heat, one pint of normal salt solution given slowly into a vein, camphor and adrenalin solution given cautiously. When signs of reaction occur, the patient is kept quiet by hypodermic injections of morphine. Absolute rest in bed without a single voluntary movement. Avoid repeated vaginal examinations, and rely on signs of internal hemorrhage for diagnosis when possible. If the patient's condition is good at the time of rupture, immediate operation is beneficial, the object being to control bleeding (which has frequently stopped before the operation), to

[3] Hunter Robb, American Journal of Obstetrics, July, 1907, and October, 1908.

[4] Simpson, Surgery, Gynecology and Obstetrics, November, 1907. Practical Medicine Series, 1908. Reed's Text-Book of Gynecology, 1901.

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prevent the recurrence of hemorrhage and to remove the blood clots and ruptured tube. Personally, I do not think it wise to elevate the foot of the bed, for one of the causes of ectopic pregnancy is inflammatory diseases of the tubes, and there is danger of having any infection that may be present scattered over the entire abdomen. I would add to the expectant treatment advocated by Simpson, the suggestion of Robb that shot or sand bags, as heavy as can be conveniently borne by patient, be applied to the lower abdomen. The weight on the lower abdomen had a marked influence in slowing the pulse rate, and respiration of the dogs mentioned in Robb's experiments.

I have operated upon too few cases to report, and the object of this brief paper is to call attention to the fact that the recent literature seems to indicate that it is safer for the majority of men, in the majority of cases, to defer operation.

CESAREAN SECTION.

By LEWIS C. MORRIS, M. D., Birmingham, Ala.

(*Invited Guest.*)

My especial interest in this subject began in 1901, when I executed the second Cæsarean section ever performed in the State of Alabama, whereby the lives of both mother and child were conserved. I became convinced at this time that this procedure possessed superior advantages over many of the obstetric operations which were in general use, and that its field of usefulness was far broader than was generally considered by the profession. My subsequent experience in these cases, and in abdominal surgery generally, has convinced me of the correctness of these views.

When it is taken into consideration that by actual measurement about 10% of all white women in America will be found to have contracted pelves, and that 2% are contracted to such an extent as to mechanically obstruct the delivery of the child and to demand some operative interference, and that on the selection and election of the operative procedure and the promptness with which it is done, depends the life of frequently the mother and more frequently the child, we can but be impressed with the importance of this subject, especially to the general practitioner, who throughout our Southern country is most frequently the obstetrician as well.

There are three types of the Cesarean section.

First. The Sanger operation, which contemplates simply the removal of the child through an incision in the abdominal wall.

Second. The Porro operation, or laparo-hysterectomy, in which the whole or part of the uterus is removed after delivery of the fetus.

Third. The vaginal Cæsarean section of Duhrssen, in which the child is delivered by incision of the uterus made through the vagina.

The Sanger operation has been modified considerably by different operators, notably by Fritschs' method of making a transverse incision through the fundus, and by Frank's effort to dissect up the peritoneum from the posterior wall of the bladder and to deliver the child by an extra peritoneal operation. My observation has been that the first innovation offers little advantage over the typical operation, and the Frank procedure is impossible in the majority of instances.

The indications for Cesarean section may be divided into first, *absolute*, and, second, *relative*.

First. The operation is absolutely indicated with a live child in a flattened pelvis, with a true conjugate of 6.5 centimetres or less, or in a uniformly contracted pelvis of 7.5 centimetres or less, or with a dead child in a

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pelvis measuring 5.5 centimetres or less, or when the mother is moribund or has just died. It is absolutely indicated in certain cases of atresia of the vagina and cervix, due to the presence of cicatricial bands, or when there is a myoma in the lower uterine segment of sufficient size to block the pelvic outlet, or when there are tumors of the pelvic bones, malignant or benign, which prevent delivery *per vias naturales*. Of this class of cases, where the indications for operation are absolute, I shall have little to say, except to urge the importance of early diagnosis, in order that we may give our patients the benefit of early operation and prevent anti-operative exhaustion and consequent lowered existence, which are such potent factors in the mortality of this operation. This can always be accomplished by careful and thorough examination in the latter weeks of pregnancy by external palpation, digitally and with the pelvimetry of every primipara and of every multipara, the history of whose previous confinements leads to the suspicion of mechanical obstruction. The presence of practically all of these conditions which constitute the absolute indication for Cesarean section can be positively determined before the onset of labor if we will only give our patients the benefit of thorough examination, including careful mensuration.

The indication for Cesarean section is relative when the child is alive in a pelvis whose true conjugate measures as much as 8.5 centimetres, or in a general contracted pelvis, with a conjugata vera of 9 centimetres. The course of labor in cases of this class will depend upon the size and mobility of the fetal head and upon the force of the uterine contractions. The same contraction of the pelvis, which in one case would positively demand surgical interference, might not prevent spontaneous delivery in another. An excellent rule laid down by Williams, in the border line cases of this class, is that after an hour of strong second stage pains the signs of engagement are absent Cesarean section should be seriously considered, so that uterine inertia, unassociated with marked pelvic contraction under certain conditions, constitutes a relative indication. Other relative indications for Cesarean section are the presence of obstructive myomatous tumors in the lower uterine segment, which are susceptible of removal through the vagina; prolapsed ovarian or other tumors, which cannot be replaced under anæsthesia, the existence of carcinoma of the cervix, which has resulted in the formation of dense, rigid tissue, rendering dilatation of the cervix impossible; in rare instances the existence of malignant growths of the rectum, which obstruct the pelvic canal; in rare cases of eclampsia in primiparous women, in which the cervical canal is resistent and of almost cartilaginous consistency, rendering dilatation impossible; in cases of complete placenta previa, which has passed the seventh month, and are not in collapse from hemorrhage, and in uncontrollable hemorrhage from the site of the placenta, attended with uterine inertia.

In the selection of a procedure in this class we should be influenced, first and foremost, by what will conserve the best interest of the mother. At the same time, when two methods offer equal or nearly equal chances for the mother, and the one has a small, while the other has a large infantile mortality, the interest of the infant should receive due consideration. In occasional cases a slightly increased risk to the mother will be more than compensated for by the rescue of the offspring.

The obstetrical procedures with which Cesarean section comes in competition in flattened or contracted pelves are—

First. Symphyseotomy, or division of the pubic joint. This operation is only applicable with a true conjugate of 6.5 to 8.5 centimetres, and it is a much more serious operation than the text-book descriptions would lead us to believe. The hemorrhage attending it is frequently annoying, and the danger of injury to the bladder and other soft tissues is not inconsiderable. It is not devoid of the dangers of infection, and is not infrequently followed by impairment of locomotion from permanent mobility of the pubic bone. Not infrequently errors in the estimation of the size of the head or pelvis have resulted in the inability to deliver, after the performance of a symphyseotomy, and a supplementary Cesarean section or craniotomy would become necessary. In favorable cases, those which are not exhausted by prolonged labor and which are uninfected, the statistics show better maternal mortality from the Sanger Cesarean section than from symphyseotomy; and, of course, in the former the

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infantile mortality is infinitely better, for there is no obstetric procedure in which the infantile mortality is so small as in Cesarean section.

Second. The next competing obstetrical operation is pubiotomy. Personally, I have had no experience with this operation, but the recent statistics of Williams and others would indicate that in the border line cases this is a better procedure than symphyseotomy, and should be adopted in preference to it. The indications for and objections to it are about the same as given for symphyseotomy.

Third. The induction of premature labor may be elected when the fetus is viable between the twenty-eighth and thirty-sixth weeks, in pelves measuring 6.5 to 8 centimetres. The maternal mortality resulting from this procedure has within the past few years, since the general introduction of modern surgical technique, been very much reduced, but the enormous fetal mortality of 50% should be a strong argument against it, when it is taken into consideration that such cases would at term come under the favorable class for Cesarean section, in which both the maternal and infantile mortality is almost nil.

Fourth. Craniotomy should only be done when the child is dead, and the conjugate is 5.5 centimetres or more. This procedure should never be resorted to if the child is alive, but pubiotomy, the Sanger or Porro Cesarean sections selected according to the indications mentioned above.

The presence of a myoma in the lower uterine segment, which obstructs the pelvic canal, should be a positive indication for Cesarean section, unless the growth be pedunculated, when it might be removed and labor terminated normally. Prolapsed ovarian tumors, which block the pelvis and cannot be replaced under anæsthesia, demand Cesarean section.

In carcinoma, which has rendered the cervix incapable of dilatation, the Porro Cesarean section, should be the operation of election. This is indicated both in the interests of the mother and the child.

In rare cases of eclampsia in primiparæ, in which the cervix is resistent and undilatable, the vaginal Cesarean section is the operation of election. This operation consists in separting up the bladder in front, and the peritoneum behind, and incising the cervix anterially and posterially.

In cases of placenta previa, which have progressed as far as the seventh month, Cesarean section offers as good or better maternal, and a much better infantile, mortality than an other procedure, provided the patient is not in collapse from hemorrhage.

In cases of hemorrhage from the site of placenta, associated with uterine inertia, which is not controlled after delivery of the child, by hot irrigations and packing the uterine cavity, the Porro operation is indicated.

The maternal mortality in the conservative Sanger operation varies from nil to 6%, depending upon whether it be elective or done as a dernier resort, after the woman is exhausted or infected. In the Porro operation the maternal mortality is higher, and varies from 5 to 15%, depending upon the same conditions. This does not take into account the remote results in operations necessitated by malignancies.

In the vaginal operation, whose chief indication is a resistent and undilatable cervix in rare cases of eclampsia occurring in primapara, the maternal and infantile mortality is smaller than in any other method of treatment.

From the foregoing it is seen that the maternal mortality from Cesarean secton depends largely upon whether the operation is a predetermined elective one or whether it be complicated by exhaustion and infection. It is my opinion that the predetermined elective operation should have little, if any, greater mortality than a clean interval appendix operation. I also believe that in the infected, or probably infected cases, which are associated with more or less exhaustion, the drainage of the uterine cavity through the abdominal incision will give better results than the Porro operation. The infection in these cases is primarily within the uterine cavity, and with the exercise of ordinary precaution there should be little danger of infecting the general peritoneal cavity at the time of operation. The infection is a true septic progressive one, and produces, first, a metritis or a puerperal septicemia, and then a secondary involvement of the peritoneum, and not infrequently death will occur with little, if any, peritonitis. In the presence of infection the typical

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Sanger operation increases the risk from septicemia, by reason of the fact that the stagnating blood in the uterine incision and in the uterine cavity furnishes an ideal culture medium for the growth of the bacteria. For this reason I wish to advocate in infected cases, complicated by exhaustion, the drainage of the uterine cavity, in preference to the removal of the uterus, for the reason that it subjects the woman to a smaller dose of surgery, and will almost invariably, I believe, take care of infection.

I have adopted in my cases the following technique: A median incision through the abdominal wall, about 20 centimetres in length, one-third being above, and two-thirds below the umbilicus. The uterus is then delivered through this incision, and the peritoneal cavity is thoroughly protected and packed off with towels wrung out of sterile salt solution. The uterine arteries are then grasped at the cervix by an assistant, and a longitudinal incision in the anterior surface of the uterus of 12 centimetres in length is made. It is my observation that it is very difficult to determine the location of the placenta, but an incision made over it in nowise complicates the operation, as the compression of the uterine arteries absolutely controls hemorrhage. The child is then delivered, the placenta separated and removed along with the membranes. The cord is clamped and cut, and the child is turned over to an assistant to resuscitate. The uterine wound is then closed by a continuous chromicised catgut suture, which is inserted just underneath the peritoneum, and comes out just superficial to the endometrium. This suture extends from one end of the incision to the other, and is so introduced as to thoroughly approximate the margins and to leave no dead spaces. Interrupted Lembert sutures are then introduced to approximate the peritoneum. The abdominal incision is then closed in layers.

In infected cases the incision is closed as described, except 3 centimetres at the lower angle, and the drainage is established by introducing a continuous through and through catgut suture into the uterine wall for the purpose of exerting pressure and controlling the hemorrhage, and then suturing the parietal peritoneum to the uterine peritoneum near the margin of the incision. The abdominal incision is then closed by through and through silkworm sutures, except that portion of it over the opening in the uterus. A Mikulitz wick is introduced through the abdominal wall into the uterine cavity.

I beg to report the following cases:

C. W.; age 19; primipara; seen January 14, 1901, in consultation; had been in active labor for twenty-four hours; general condition good; pulse 110; she was having intense and almost constant pain. On examination the vagina was found to be completely occluded by a hard, dense, inelastic connective tissue wall. The history brought out the fact that shortly after conception had occurred a physician had been employed to induce a criminal abortion, and that for a period of two months or more he had made systematic applications to the cervix and vagina of cauterants, which the patient said had caused great pain, and kept her in bed most of the time. The upper part of the vagina had evidently been completely denuded by the applications, which resulted in a complete atresia. Patient was sent into the hospital and operation begun twenty-eight hours after the onset of labor, and executed as described above. The child and placenta were rapidly delivered, and the former was resuscitated without difficulty. The cervix was explored from above, and was found undilated, rather hard and apparently occluded. With an assistant pressing his finger from below against the thinnest point in the fibrous septum, which was about its center, and with my finger in the internal os, I made an incision from above through the cervix and fibrous septum, having the bistoury withdrawn through the vagina. A 2½ inch eight layer gauze drain was then passed from above through the cervix and vaginal cicatricial tissue, leaving one end in the uterine cavity. The operation was then completed as described above, and consumed fifty minutes. The woman did not lose as much blood as is ordinarily lost in normal confinement. The gauze drain was changed daily for several days, and the patient made an uncomplicated recovery, except that there was a slight infection at the upper angle of the skin incision. The baby nursed until he was eighteen months old, and in his growth and development differed in no wise from the infants who enter the world in the natural way.

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Case No. 2.—Mrs. McK.; primipara; age, 26; examined on the night of April 24, 1905. Gave history of having reached full term. For several days previously had had periodical pains at intervals, with long remissions, during which time she was comparatively comfortable. On digital examination the vault of the vagina was found almost entirely filled by a myomatous tumor as large as a closed fist, which was in the lower uterine segment. The cervix was dilated just enough to introduce one finger. The tumor was so large that it absolutely precluded the possibility of spontaneous delivery, and its location was such that I deemed it inexpedient to attempt its removal through the vagina. On account of the slight cervical dilatation, and the fact that the patient was at this time perfectly comfortable, it was decided to defer operation until pains should start again. The fetal heart sounds at this time could be heard. The patient slept well that night, and the pains started again about 10:30 on the following morning. Simultaneously with the commencement of pain, there was rather a profuse discharge of meconeum. On examination at this time the fetal heart could not be heard. The operation was performed as described above, and the child was found to be dead. The operation was completed as in case No. 1. Recovery from the anæsthetic was prompt, and the patient progressed nicely for the first three days, the bowels moving satisfactorily and the abdomen being soft, undistended and not sensitive. On the third day she had a rigor, and temperature jumped to 103 degrees, pulse 120. From this time on she ran a typical course of puerperal septicemia, without any evidence of peritoneal involvement, and died on the elevnth day after operation. In this case there was an intra-uterine infection prior to operation, which would probably have terminated differently had I done a hysterectomy, or had I drained the uterus through the abdominal wall, as described above.

Case No. 3.—Mrs. B. F.; age, 23; primipara. This patient was seen about December 1, 1905, in consultation, and was about eight months pregnant. Her history and condition indicated rickets in childhood, as there were exostoses of considerable size on several of the long bones. She had a flattened pelvis, with a true conjugate of about 10 centimetres. There was a bony tumor at the sacro-iliac synchondrosis on the right side, which I thought would prevent delivery. I advised waiting until labor started, and if, after an hour or more of active second-stage pains there was no engagement of the head, then do a Cesarean section. Labor began at 1:30 A. M. on the 27th of December, and patient was sent into the Hillman Hospital. Dilatation was complete, and expulsive pains started about noon. At 2:30 P. M., after frequent and strong bearing down pains, there was no engagement; so immediate operation was advised. The operation was begun at 3:30 and executed as described, consuming about forty minutes. The resuscitation of the infant was accomplished without difficutly, and the subsequent course of both mother and child were absolutely uneventful. The milk started on the third day, the subcutaneous abdominal stitch was removed on the ninth day. She was out of bed on the tenth day, and drove home on the 14th day after operation.

Case No. 4.—Mrs. A. B.; age, 19; primipara; admitted to St. Vincent's Hospital May 19, 1907, at 10 A. M. Patient had been in labor forty-eight hours, and during the course of the night before admission efforts had been made by two obstetricians to deliver with forceps, under conditions unfavorable to asepsis. When examined the patient was badly exhausted, with pulse of 130 and temperature of 101.5. On digital examination the head was presenting at the superior straight and unengaged. There was a flattened pelvis, with an antero-posterior diameter of 9 centimetres. In view of the fact that delivery with instruments had been unsuccessfully attempted by two accomplished obstetricians, I decided to do a Cesarean section. Under ether the operation was executed as in previous cases. The child was delivered and resuscitated with some little difficulty. There were several contusions on the head, resulting from the efforts at instrumental delivery, but except for this, the baby appeared to be all right. The abdominal and uterine incision were closed, and a gauze wick was left in the uterine cavity projecting through the cervix, for the purpose of promoting uterine drainage and stimulating uterine contraction. This patient ran a temperature varying from 101 to 103 for six days, when it became evident that there was an accumulation of fluid about the center of the abdominal incision. The incision was opened at this point

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and two or three ounces of pus escaped. On irrigating this cavity it was found that the water escaped through the vagina. After this the temperature dropped to about normal and the convalescence was uninterrupted, patient leaving the hospital entirely well five weeks after operation. This was a case from whose history I had every right to infer had been infected, and in which if I had drained the uterus through the abdimonal incision at the time of operation, convalescence would have been quicker, and the fortunate outcome, which nature accomplished, would have been assured.

Case No. 5.—In this case I was associated with my friend and colleague Dr. Jordon, of Birmingham, through whose courtesy I am permitted to report it. Mrs. S. S.; age, 23; primipara; seen in consultation with Dr. Jordan at 11:30 A. M., August 10, 1908. Had been in labor thirty-six hours, and was beginning to show evidence of exhaustion. Pulse was 120; had had hard pains for twelve or fifteen hours, but for the last three or four hours before I saw her, pains were less frequent and weaker. Waters had ruptured early in the course of labor. On digital examination, cervix was fully dilated and the head was presenting at the superior straight, unengaged. Patient was sent into the hospital, and under ether anesthesia, an unsuccessful effort was made to deliver with instruments. An attempt to do version was also unsuccessful; so Cesarean section was decided upon, and executed as previously described. A child weighing twelve pounds was resuscitated without difficulty. At the request of the husband this patient was sterilized by tying the outer extremities of both tubes in two places and cutting between the ties. The convalescence of this case was a-febrile. The milk came on the third day; patient was out of bed on the tenth day, and returned home on the fourteenth day.

CONCLUSIONS.

An important factor in this opration is to minimize the loss of blood, and this is best accomplished by having the uterine arteries grasped by an assistant, or compressed by encircling the cervix with a soft rubber catheter before the uterine incision is made. If this is done there is no blood lost except what is already in the uterine sinuses, and it does not interfere in the least with the progress of the operation, or the post-partum uterine contraction.

In predetermined elective Cesarean section, it is never necessary to remove the uterus, except in the presence of uncontrollable hemorrhage from the site of the placenta, which I have never seen, or where there is carcinoma of the cervix or myomatous tumors which cannot be enucleated.

In the presence of exhaustion and infection or probable infection, the uterus should either be removed or treated as we do our infected gall bladders, by drainage through the abdominal wall.

If the prevention of future conceptions is desired, it should be done by tying off the tubes at their outer ends, as hydrosalpynx has been reported following cases tied near the uterus. This can be done without loss of time and involves a minimum amount of surgery.

In cases in which a diagnosis of the positive indications for Cesarean section has been made before the onset of labor, I am convinced that it is safest and best to carefully compute the termination of gestation, and when this time arrives, to operate regardless of the onset of labor. I am also convinced that a diagnosis of the conditions which would necessitate Cesarean section, can most frequently be made before the onset of labor. If this is done, then tne operation becomes one of *election*, and in the hands of an experienced operator, and done under the proper conditions, the maternal and infantile mortality should be almost nothing, or no greater than in clean interval appendectomies.

830 *South Twentieth Street.*

DISCUSSION.

DR. EDWARD MCGUIRE, *Richmond:* My experience with Cesarean section is limited to seven cases. Two of these cases occurred in the hands of Dr. Hunter McGuire when I was associated with him. One of them was badly septic at the time the section was done, and the patient died. The other re-

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covered. I would like to ask Dr. Morris whether, in draining the uterus, the tube is carried from the abdominal wall through to the vagina?

DR. MORRIS: Through the abdominal wall into the uterine cavity.

DR. MCGUIRE: Two or three months ago, I had a case of vaginal Cesarean section. It was a case of eclampsia, with undilatable cervix. Continued effort had been made to dilate the cervix and deliver the patient (who was unconscious), but without success. I tried it myself. I then did the Dührrsen operation, which I will not go into. The patient lost practically no blood. I closed up the cervix and she recovered. I think this is one of the most important operations in the treatment of the cases of eclampsia with undilatable cervix. This woman was seven months pregnant. It was a quick, easy and successful operation, much easier, I think, than the prolonged effort and the danger of infection in trying to dilate the cervix sufficiently to deliver the child.

Another case of my own, which I lost, was a Cesarean section in which the child had been dead five days. The woman was septic when she came into the hospital. I did the Porro operation: the woman lived a month and then died.

Another case in which I did the Porro operation was a case of rupture of the uterus. The woman was known to have a contracted pelvis, and it was suspected that she should have to have a Cesarean section done. On the way to the hospital, or before she left her house, the uterus ruptured. On opening the abdomen, I found the placenta in front of the abdominal incision, the 12-pound baby dead in the upper portion of the abdominal cavity, and the uterus torn two-thirds across transversely. The woman had sustained no shock or hemorrhage to amount to anything. The uterine wall was contracted, and there was probably a quart of blood in the abdominal cavity. I did not know the hemorrhage was present until the abdomen was opened. I did the Porro operation, and in three weeks, the woman was well.

I agree with Dr. Morris as to the safety of Cesarean section, unless the case is infected, and then the mortality will rise as high as 25 to 30%.

I do not agree with Dr. Morris in regard to draining the uterus; I do not see the necessity for it. If you have the cervix well dilated, either by incision or by proper dilatation, before finishing the operation, I see no reason for introducing an abdominal tube through the uterus and abdominal wall. If there is infection present (and we all know that streptococcic infection is the one we are to fear), the infection has passed beneath the endometrium and has entered into the uterine structures and other parts of the pelvis, and the mere fact of draining cannot be effective. If irrigation is necessary, I do not see why it cannot be done just as well through the vagina in the usual way.

I do not, as a rule, deliver the uterus, except in certain cases where I am going to do the Porro operation. I pack around the abdominal wall closely, and have never had any trouble using that method.

DR. GEORGE TUCKER HARRISON, *New York:* I agree most heartily with the conclusions at which Dr. Morris has arrived, and the reasons therefor.

In regard to placenta previa, I do not believe that the classical Cesarean section is indicated at all. Dr. McGuire is exactly right. In the few cases you come across of undilatable cervix and placenta previa, where it is necessary to empty the uterus at once, the Dührrsen method is the operation. Dührrsen doesn't make any incision on the side; he goes through the anterior wall and through the posterior wall, and that is the operation. It is an easy operation, and it is a very speedy one. You cannot always do what you think is right in a case. In placenta previa you may go and propose to the family to perform a classical Cesarean section, and they may not consent to it, but I do not think anyone would make any objection to the precedure through the vagina.

In regard to the technique, I am very fond of using the transverse incision of Fritsch through the fundus. I have never had any trouble with hemorrhage, and therefore do not use the method of constriction described by Dr. Morris. Fight, of Berlin, at first opposed the operation of vaginal Cesarean section, but later performed it in 50 cases of threatened eclampsia, with uniformly good results.

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DR. J. WESLEY BOVEE, *Washington:* In regard to sterilization of the woman, I do not believe we are justified in ever sterilizing a woman because the husband requests it. I think we should only do it when we think the future health or life of the woman is jeopardized materially by our leaving it undone, i. e., by future pregnancies.

Another point, about ligating the tubes in two places and cutting between them, as giving us positive sterilization, is, I think, unfounded on experience. It has been proven quite conclusively by operations done several years ago, that it is necessary, in dealing with the Fallopian tube to prevent conception, to be sure, first, that there are no supernumerary tubes, and then in severing the tube. Ligatures surely do not have any effect on it. Dr. ——— reported four cases several years ago, after removal of the Fallopian tubes, as he supposed. One woman had two children afterward. It it quite plain that there was some ovarian tissue left, and the ligatures cut through and left permeable tubes. We know well that in dogs and cats, the intestines have been ligated, and in a few days the canal was permeable. It is necessary to cover over the ends with peritoneum. It is only infectious processes near the cut end that would set up inflammation there that would be nonabsorbable, and that would leave a closed end. You know that very often we find a Fallopian tube in which there had been infection and surrounding peritonitis, in which we will find the extremity still freely open.

As to drainage of the uterus, I think this is best done by taking advantage of dependent drainage, and therefore I should drain through the cervical canal. If we wish to drain the muscular tissue of the uterus, pass the material into the muscular tissue, but cover it with peritoneum. I do not think it is advisable to drain across the cavity.

Another point I think is of value is putting in a stiff tube through the cervical canal for drainage purposes—either glass or a thick rubber tube of considerable calibre. It has been proven that the amount of drainage we get from any material, especially from gauze, is proportional to the area of the cross section of the gauze, where it comes through a constricted portion. If we make the drainage free, we drain the uterus very well indeed. It is better than draining uphill through the abdominal wall. I do not think any pelvic drainage is as well conducted in this way.

In regard to section of the vagina: It seems to me that in the puerperal woman, near full time, with the vaginal wall prepared for the passage of the fetus, it is sufficiently dilated for doing our ordinary work; we certainly would not split it to deliver her with obstetrical forceps, and I do not think we should split it for delivery beyond the cervix.

DR. JOHN F. WINN, *Richmond:* In former days, severe cases of dystocia caused by contracted pelves were relieved by craniotomy, but where is the physician to-day who will sacrifice a living infant who has at his command the operation now recognized and practiced. It is encumbent upon every physician to employ general pelvimetry by external measures in every case of contracted pelvis, and to give the woman the benefit of that operation which is best adapted to the particular case.

DR. LEWIS C. MORRIS, *Birmingham, Ala.:* I expected to hear more criticism of the paper, in regard to drainage, because it is apparently a retrograde procedure at first sight. I believe, however, if you will review the mortality rates from Cesarean section, and appreciate that there is no mortality except from sepsis, and that this occurs in cases in which the typical Sanger operation is done, the incision made into the uterus, closed, and drainage through the vagina established, you will find it attested to that the beginning infection occurs in the uterine wall, and thus travels to the peritoneal cavity. There are cases which die without any apparent involvement of the peritoneum. They die from septicemia, without extension into the peritoneal cavity at all. Now, I believe it is to these cases that drainage of the uterus is applicable. There are certain cases of streptococcic infection that are going to die in spite of anything. They are rare cases, and I believe that drainage through the abdominal wall gives you counter drainage, and enables you to keep up continuous irrigation if you please. I have never done it, and it is shown in one of the cases I referred to, where nature did it for me.

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As regards sterilization of the patient, I agree with Dr. Bovee perfectly. Unless there are pelvic conditions that endanger the life of the woman at some future conception, it is unjustifiable. My opinion is that ninety-nine times out of a hundred, ligation of the tubes at the outer extremity and cutting between them will sterilize the patient, and I am willing to take my chances.

In the second case I did, hemorrhage was quite considerable, as the incision was made into the uterus. It was compressed by the hand of an assistant or soft rubber catheter. The method described is easily done, and does absolutely control the hemorrhage.

EXTENSIVE LACERATIONS OF THE CERVIX UTERI INVOLVING THE PARAMETRIUM—THEIR SIGNIFICANCE AND TREATMENT.

By GEORGE TUCKER HARRISON, M. A., M. D., New York, N. Y.

Consulting Surgeon to the Woman's Hospital; Consulting Obstetrician to the New York Infant Asylum; Consulting Gynecologist to the Misericordia Hospital; Surgeon to St. Elizabeth's Hospital, etc.

A priori considerations might induce the belief on the part of some among my audience that the discussion of this theme before such a body of learned men of our profession is like carrying coals to Newcastle, or owls to Athens. I hope, however, to convince you that this view is erroneous. I shall give you a few illustrative cases before analyzing the subject in detail.

A few years ago a case of eclampsia occurred in my service at the New York Infant Asylum; I found that the patient was in labor, and I told the house physician to let labor go on and not intervene until the cervix was well dilated. The symptoms were not of such a threatening character as, in my opinion, indicated active intervention. During my absence from the hospital the house physician became alarmed by the recurrence of the convulsions and had recourse to accouchement force. The consequence was that, on my opportune return, I found that my assistant on the house staff had ruptured an artery on each side, owing to a double laceration of the cervix involving the parametrium. He had controlled the hemorrhage by applying a Péan's forceps to the broad ligament on each side of the cervix. He had tried to secure the bleeding vessel of one side by suture, but in vain. I showed him how to pass the suture behind the vessel deep in the parametrium and thus controlled the hemorrhage, the cervix being drawn down by a bullet forceps. As a result of the manipulation to which she was subjected the patient had an attack of parametritis, a certain amount of septic infection occurring on one side, and convalescence was protracted.

About five years ago I was consulted by a lady, who gave as her history symptoms of constant pain in the lower part of the abdomen, which dated from a confinement six years previously. The delivery was difficult and accomplished by active intervention. The puerperium was attended by high fever, pain, and was protracted. This lady consulted a number of physicians, and all sorts of operations were suggested, including removal of the ovaries, of the adnexa, and even hysterectomy. Vaginal examination with bimanual palpation revealed the fact that she had suffered an extensive laceration of the right side of the cervix, involving the corresponding parametrium. There was a large cicatrix, painful on touch, extending into the parametrium, which hindered the uterus in its movements, and fully explained the annoying sensations of which the patient complained. In the performance of the operation, clearly

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indicated, I attempted to dissect out all the cicatricial tissue in the parametrium, with the result that I entered the pelvic cavity. That was doubtless the original lèsion, and easily explained the dangerous symptoms manifested during the puerperium. The patient recovered her health perfectly after the operation. The significant fact here is that this woman was examined by a number of physicians, and not one made the correct diagnosis.

With the gradual development of the art and science of obstetrics it must be borne in mind that in the future these deep lacerations will be more apt to occur than in the past. Formerly it was laid down as the cardinal rule that no operative procedure directed to the delivery of the child should be performed until full dilatation. At the most, it was allowable to use the forceps or apply version, when indicated, after premature rupture of the bag of waters, even though full dilatation had not been completed, with the consequence of more or less of a tear. Now, however, in cases of eclampsia or placenta prævia, version and extraction are called into play, although a relatively narrow os uteri and cervix must be dealt with. In these circumstances we have more to dread from a long lasting birth than from the consequences of a laceration.

This change of the point of view, I need hardly remind you, is due to the security engendered by asepsis and antisepsis, and especially, by the application of surgery to obstetrical practice. It may not be amiss also to remind you that in the rare cases of placenta prævia attended by a long cervix, not dilated or dilatable, the application of the vaginal Cesarean section is indicated, and danger of laceration is thus avoided.

I would like to remark here that if the use of the Bassi method of instrumental dilatation is largely adopted the number of extensive laceratons must be greatly increased. It is important that the laceration should be diagnosticated as soon as it has originated. The resistance offered in the extraction of the head, the sudden yielding of the tissues, the hemorrhage immediately following birth, the fact that bleeding persists, notwithstanding the uterus feels hard and well contracted, that the blood does not coagulate, is not dark, but bright red and fluid, are sufficient diagnostic criteria. In the cases that have come under my observation in private and hospital practice and in consultation, I have always been enabled to control the bleeding by suture, but I am aware that cases may occur in which the suture may fail, or is not available on account of the lack of proper assistance. I think it, therefore, fortunate that the distinguished professor of gynecology at the University of Bonn, Dr. Fritsch, has introduced a method which may be applied under all circumstances, and is eminently efficient.

Let us hear, in the first place, his views on the use of the suture: "My experience has taught me," he remarks, "that the suture which I once recommended, and which I have often enough used, does not give certain results. I have seen many a *post-mortem*, in the course of years, in which the suture was used, *secundum artem*. The rupture is deepest at the point at which the parametrium is attached to the cervix—nay, I have seen cases in which the external os uteri and the fornix vaginæ were completely intact; above, however, there was a deep laceration through the cervix, in which two fingers could not attain to the end. At the moment of the passage of the head the cervical wall is only from two to three mm. thick. If the physician in the delivery of the after-coming head, with the finger in the mouth of the child, draws directly downward, and the head occupies a transverse position, he involuntarily presses the occiput before and to the side against the pelvic wall. If, now, the assistant forces the head down from the outside, the thin wall of the cervix ruptures at the point at which the occiput demands a quite considerable space. The narrow forehead is much below the narrow place when the last coming occiput ruptures the cervix. The laceration is generally in front of the uterine artery, but if this vessel is fixed by an old parametric cicatrix, it may also be torn. I have several times, in a *post-mortem* examination, seen in the midst of a laceration the two large lumina of the ruptured uterine artery, opposite each other. The vaginal branch may also be of the thickness of the radial. An hemorrhage from a ruptured *ramus vaginalis* may cause death even in a non-pregnant woman."

Other considerations add force to these views. When the portio is seized with the bullet forceps and drawn down to the vulvar opening, for the purpose

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of uniting the torn surfaces by suture, the uterus follows the traction, but not the parametrium; the deepest place of the laceration, which is in the parametrium, remains above.

Have any of you gentlemen endeavored to repair a ruptured uterus after opening the abdominal cavity? If so, you must have noticed that while you could suture the rent in the uterus, you found it impossible to bring together the entire wounded surfaces in the pelvis, operating from above. I fully agree with Fritsch, that the attempt to control the hemorrhage by the tampon is a waste of time and attended by disappointment. The method employed by Fritsch is designated by him as that of double compression, and is thus accomplished. The placenta is first of all removed; this is easily done, as the inner os uteri is either wide or lacerated. The uterus now contracts readily. The physician then, with the right hand, presses the anteflexed uterus as deep as possible into the pelvis, and, in that way, all coagula are forced out. The operator, standing on the left side of the bed, seizes the vulva with the left hand, pressing the *labia majora* together and forces them above into the angle of the arch of the pubes, as if he would shove the entire pelvic floor into the pelvic cavity above. The maneuver would be found to be difficult in the case of a woman who had not been just delivered. Not so with a woman recently delivered, in whose case the parts are flabby and lie on a lower plane, as it were.

Now, with the hand above co-operating with the hand below, the parts are forcibly compressed. The lower arm is not so readily paralyzed as its elbow rests on the bed. When the upper arm is paralyzed an assistant is instructed to press on the upper hand with his or her two hands, to lean on it, as it were. It matters not whether the laceration is on the one side or the other, pressure is made directly downwards. The hands are held in this way for half an hour, three-quarters, or even longer. The patient, meanwhile, lies perfectly quiet and has restorative drinks administered. The pressure does not give pain. The upper hand is slowly withdrawn and the uterus remains, generally, strongly anteflexed, as if fixed. The bleeding does not recur because thrombosis has occurred. A bag of sand or shot may substitute the upper hand. Fritsch has, by this method, controlled, in a few minutes, colossal hemorrhages. The advantages of the method he thus enumerates:

1. "The entire treatment is extra-vaginal; a danger of infection by the procedure is consequently excluded.

2. "The blood also, which would be certainly lost with suture or tampon, remains in the body.

3. "The hemorrhage is controlled in the most rational manner, from the fact that the bleeding surfaces are pressed together so firmly that there is no longer a space in which bleeding could take place. Provision is consequently made for adhesion and healing from the fact that the raw surfaces are pressed on and into each other.

4. "No after treatment is necessary. When the hands are released, if no bleeding takes place, any further manipulation is superfluous."

The obvious advantages of this method are its simplicity, its ease of application, under all conditions, and its efficiency. One surprising merit it has—that of excluding the possibilty of infection. It wll be remembered that in the first case I narrated attention was called to the fact that an attack of parametritis followed the manipulations adopted to close the laceration by suture. With reference to the remote effects of these extensive lacerations, I would remark, that it is not at all necessary, I believe, to endeavor to exsect the cicatricial tissue from the parametrium in its entirety. Two dangers menace the operator; he may, in the first place, have my experience and enter the peritonal cavity; and secondly, he may open the uterine artery or one of its branches. The morbid symptoms are evoked, in these cases, by the fixation of the uterus; if, therefore, the mobility of the uterus is restored by division of the cicatrix running out into the parametrium, in the performance of trachelorrhaphy, the patient will get relief.

I lately had a case, a private patient, at the New York Infant Asylum, which beautifully confirmed the efficacy of the method of treatment described above. The patient, a woman about seven months pregnant, had symptoms of impending eclampsia. I induced premature labor by packing the cervix with iodoform gauze and then by manual dilatation after the removal of the gauze.

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She had sustained a severe laceration in a previous confinement, for which trachelorrhaphy had been performed. In dilating, the cicatricial tissue gave way and I caused anew an extensive laceration involving the parametrium, or rather, I reproduced the old lesion. I delivered the patient of a dead infant by podalic version. I did not suture the laceration at once for fear I might set up septic infection in consequence of the necessary manipulation involved in such an operative procedure. At first there was apparently no hemorrhage, but after I left the hospital a furious hemorrhage took place. My house physician packed the uterine cavity with iodoform gauze. This did not control the bleeding but partially, as was to be expected, and I, therefore, resorted to the method of Fritsch, with the aid of the house physician, the pressure being continued for half an hour or more. The result being perfect control of the hemorrhage, and subsequent healing of the laceration.

132 *West Seventieth Street.*

SACRAL HEMATOMA; SPINA BIFIDA CONVERTED INTO HEMATOMA DURING BREECH PRESENTATION; THE TUMOR PRESENTING.

By E. T. BRADY, M. D., Abingdon, Va.

We are all familiar with the ordinary neck hematoma complicating labor—harmless and amounting to but little, but I have never seen any reference to

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one except on the neck. This is a sacral hematoma, differing in nowise from the ordinary neck hematoma. The tumor presented, and was supposed to be the ordinary bag of water. An attempt was made to rupture it, which was fortunately not successful. The tumor weighed nine ounces, the baby four and one-half pounds. Labor was not complicated in any other way. The tumor was removed after birth, and in three weeks has not refilled, and the child is perfectly normal.

TREATMENT OF CANCER.

By HARVEY B. STONE, M. D., Charlottesville, Va.

Professor of Surgery, University of Virginia, etc.

It is perhaps unnecessary to emphasize the importance of cancer and its treatment, except to say that to many minds the question of malignant tumors is the greatest problem now before the medical world. The general problem has many subsidiary divisions—etiology, pathology, diagnosis, treatment, etc. —each of which is in itself a fit subject for most searching thought and investigation. With only one of these sub-divisions—namely, treatment—are we at present concerned, but before taking up in detail a discussion of our proper subject, it may be pardoned if we call attention, in passing, to the obvious fact, that the treatment of any condition is intimately dependent upon a clear conception of its etiology and pathology. The lack of such a clear conception, in the case of malignant growths, constitutes the chief reason for the present chaotic state of our ideas in regard to the treatment of cancer. Consequently the conclusion is manifest, that the best way to arrive at the treatment of cancer is first to discover the true nature of the malady; the vast change in the treatment of infections shows what therapy may gain from a scientific understanding of cause and pathoolgy as compared with conditions of treatment when empiricism is our only guide.

But to turn our attention from future hopes to present conditions, we find at this time, that the medical world is groping blindly, but persistently, for some better method for handling this great question of malignant disease; and the very multiplicity of methods which are now contesting for favor is in itself, as has often been remarked, eloquent evidence of the absence of any one pre-eminently satisfactory treatment. Without considering the various cancer pastes and corrosives, which are now practically relegated to the region of quackery, the following forms of treatment are sufficiently important to be considered in some detail: Coley's serum, the X-ray, radium, trypsin injection, blood tranfusion, immunized sera, and radical surgery. The question of treatment naturally falls into two divisions—methods which aim at a permanent cure of the condition, and those which have no hope beyond the amelioration of disagreeable symptoms, and the prolongation of life. It is of course clear that there is a field for both of these forms of treatment, and in forming an estimate of the value of any particular method of handling cases one must bear in mind the fact that a remedy may yield valuable service in the second or palliative group of measures, and utterly fail to gratify the hopes of radical cure. But it also must be remembered that the statement that such and such treatment will prolong life. or alleviate symptoms, is a difficult one to substantiate. It is almost impossible to say, a priori, how long any patient suffering from a cancer will live, and therefore to conclude that any particular treatment has lengthened or shortened the period of existence, after its administration, is obviously almost a hopeless proposition. Cer-

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tainly a few cases only lead to no safe conclusions. Similarly the great variation from time to time in the intensity of subjective symptoms, and the part played by the mental condition of the patient, which is open to change by suggestion, makes the conclusion that a certain course of treatment has been of benefit in these respects a very dubious and indefinite one. With this statement as to the conditions which apply, in general, to any method of treatment we will now proceed to consider in deetail the various measures enumerated above.

The discussion of Coley's serum, in this paper, is possible only by a broad interpretation of the word "cancer," to include malignant growths in general, because the originator of the so-called serum itself specifically states, that he believes the method has no efficacy whatever in the treatment of carcinoma, but applies only to sarcoma. The discovery of this form of treatment, as perhaps we are all aware, was due to the clinical observation of a number of cases of sarcoma which improved greatly or entirely recovered, following a coincident accidental infection with *streptococcus*. This occurrence suggested to Fehleisen, Coley and others the advisability of treating sarcoma by the injection of *streptococcus* toxins. The practical use of the toxins has varied from time to time, and with the *streptococcus* toxins are now combined the toxins obtained from cultures of *prodigiousus*. It is unnecessary to describe in detail the application of this treatment; we are interested particularly in results. The treatment, I may say, is described as generally unsatisfactory, in the hands of nearly every one except its originator. There are other investigators who have reported satisfactory results, but such reports are few and isolated, and by far the best reports came from Coley himself. A conception of just what these results are may be obtained from the following figures: In 1907, Coley reports 400 cases treated. In 43 of these the tumor at one time disappeared; in 27 cases permanently, and in the other cases with a recurrence. In addition to the cures claimed, Coley states that the treatment prolongs life. As has already been noted such a claim has comparatively little value, when based upon a relatively small number of cases. Beside his own cases, Coly says that there are on record six others cases in which there has been a cure. Evidently we have here a treatment which is not a triumphant specific; indeed no one has made such a claim for it. The best that can be said is that in those cases where other methods of treatment are not applicable, it is perhaps giving the patient every possible chance to resort to Coley's serum; unfortunately the resort is not a very hopeful one. In several cases which have fallen under the personal observation of the writer, the use of Coley's serum has been attended by no other result than to super-add to the troubles of the malignant growth, the disagreeable effects of toxic absorption. It is true that these cases have been few in number, perhaps not more than 7 or 8, but in no case was there any appreciated improvement whatever.

The use of the X-ray in the treatment of malignant diseases has been fairly well worked out, and certain definite results have been achieved. For the large group of epithelial tumors which attack the superficial structures, the X-ray has a very definite and beneficial effect. The journals contain frequent reports of the success of the X-ray treatment in such cases, among which may be noted the work of Dr. Ennion Williams of this city; but this is not the only field in which the X-ray has been of benefit. It is now used quite generally as an aid to radical operation, exposures being made before and after the removal of the main mass of the growth, and it has even been applied by some surgeons to the open incision during the operation. It is difficult to determine accurately just what effect may be hoped from this statement, but a review of current literature for the past two years leaves one with very definite impressions that recurrences have been less frequent following operations when the X-ray was used, than in those cases in which it was not employed. Just a word as to the dosage desirable. The X-ray has properly been considered a dangerous agent to employ, but until the present time it apparently has been used too cautiously for the treatment of such cases as we are now considering. As one writer very appropriately states: "We do not employ mercury in minimal doses, but push it to the therapeeutic limit; similarly the X-ray should be pushed until there are beginning signs of overtreatment."

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This means, in practice, that exposures have been lengthened until in some cases they have been employed continuously for 30 to 50 minutes, and, indeed, some claim that exposures should be kept up at close intervals and over long periods until the skin begins to show signs of dermatitis. It is with the X-ray used in this manner that the best results have been observed. The X-ray has also been used with about the same amount of success in cases of superficial sarcoma.

The use of the radium is of more recent date than that of the X-ray, but the results promise to be equally satisfactory. It is of service in the same class of cases in which the X-ray has proven of value—that is, in superficial epitheliomata, and after operations, as a preventive of recurrences. Indeed, there are some who claim that radium is a more serviceable agent than the X-ray, basing this opinion upon the fact that radium can be applied in more accurate dosage, over more accurately determined areas, and is less expensive. To be sure, the initial expense of radium is large, but barring accident, it is practically indestructible, and apparently its efficacy is inexhaustible. There have been a number of reports of cases in which the radium treatment has been employed with favorable results, and one or two of startling success. Thus Alfred C. Haven, of Lake Forest, Ill., reports in J. A. M. A. in 1907, a case of far advanced inoperable cancer of the cervix, which was absolutely cured by radium treatment, used daily for a period of over a year. This case, in itself, is of course without great significance and warrants no general conclusion, but it seems to have been carefully and scientifically observed, and warrants the belief that more will be found in this field of investigation. The X-ray and radium together constitute a means of treatment which certainly seems to have value in a limited class of cases. As to how far their usage can be extended in the future, or as to how great their success will be when applied to more difficult fields for treatment, it is impossible to say. Certain it is, however, that they have a useful place among the remedies for cancer.

We now come to a class of remedies of which trypsin may be taken as a type. It will be recalled that trypsin was introduced to the general public, in this country, through the pages of a popular magazine. It was suggested as a treatment for cancer by Prof. Beard, of Edinburgh, on theoretical grounds based upon embryological observations. The theory is that epithelial structures proliferate more freely in the absence of the pancreatic secretion, and therefore that carcinoma can be controlled by increasing the amount of such secretions in the body by injection of pancreatic ferments hypodermatically. It has also been advised to treat the growth locally by a wash or lotion of the same ferments. It is now several years since the trypsin treatment was first recommended, and while the time has been too short to absolutely determine its value, there has been sufficient investigation of the method to arrive at tentative conclusions, at least, in regard to its value. Aside from the claim of its discoverer and a few ardent supporters, little positive evidence has been adduced in its favor. Indeed some of the evidence brought forward by the supporters of this method has shown to be not genuine. There are no cases on record which can be proved to have been cured by this treatment. The claims of prolongation of life given must be commented upon as being unimportant. The reports in the literature, and the several cases where the writer has personally seen it used, show practically no benefit whatever from the injection of trypsin. It is true, however, that the local application of the lotion to ulcerating surfaces cleans up discharges to some extent, and renders the patient more comfortable in this way. To this extent it has some value, but this is practically all its value.

The British Imperial Cancer Research Laboratory, in its report for 1907, declares trypsin utterly useless, after extensive investigation.

Other investigators have pursued the same line of thought, by using other ferments in the treatment of cancers. As an illustration, the proteolytic ferments from the liver have been injected similarly. Thymus gland, by mouth or by injection, has been used also. From all these experiments we get the same report: no cures, but frequent expression of belief that the patients have been benefited in some obscure way or that life has been prolonged.

We now come to still another group of methods which may be classed under the general term of serum treatments. These methods vary, from the

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injection of blood of various animals into patients suffering with cancer, up to the exsanguination of patient and the refilling of his blood vessels by direct transfusion from a relative or friend. Using the first method, Bier has treated a number of cases by injection of pig's serum into the tumor. The sera of various other animals have also been used. The results are negative. As to the use of the transfusion of human blood, it seems to rest upon more logical grounds than do any of the other serum treatments. Crile and Beebe have shown, that in certain lympho-sarcomata of dogs the tumor can in a large per cent. of cases be cured by draining off the blood of the afflicted dog, and filling him up with blood from a healthy animal. Crile has followed out the suggestion of this line of experimentation, by examining the blood serum of patients suffering with cancer, and is inclined to believe that this serum has a definite hemolytic effect on normal corpuscles. The work as yet lacks substantiation, but the suggestion has been made that it may be possible to cure cancers by supplying the cancer patient with a new circulating fluid. The possibilities of establishing immunity and successful treatment by serum injection, is perhaps the most hopeful outlook in the whole cancer problem to-day. But it is still only a project of the future and not an established fact.

The last method of treatment for consideration is surgery. Surgical treatment of a malignant disease may be palliative or radical. The first division may be dismissed with a word; it is of use only to relieve a patient of an obnoxious ulcerating growth with no hope of permanent cure. The latter method, or radical surgery, may fairly be called the main reliance of the physician at present in dealing with malignant growths. It is still far from perfect, but at least in a certain percentage of cases, does give a definite and permanent cure. The recent work of Handley, of the Middlesex Hospital, London, has illumined the surgical principles for handling cancers. He has shown that cancer metastasizes by a continuous permeation of the lymphatic channels, and not by embolism, either in the lympatic or the blood vessels. This means that for a long time cancer remains a local, even though a very extensive growth, and therefore if it is possible to excise beyond the limits of its invasion, you can reasonably expect a permanent cure, because the rest of the system is free from emboli. The technique of the removal of such a growth must, however, be so planned that the microscopic growing edge of the cancer is entirely removed. There are many parts of the body in which anatomical conditions prevent this ideal complete removal. Cancer of the breast lends itself more favorably to such operations than does any other of the common sites for cancerous growths; therefore it may be well to briefly review the fundamental principles involved in the operation for cancer of the breast.

Handley has shown that the spread of cancer is chiefly along the lymphatics of the deep layer of the superficial fascia. The involvement spreads in an ever-widening circle, which is roughly concentric with the primary focus; hence the operation consists in making a circular incision about the primary growth, with as wide a radius as the anatomic conditions will permit. In addition to the circular incision, two other incisions are made. One of these extends upward over the pectoral muscles to the shoulder, and a short distance down the arm. This permits access to the contents of the axilla, which is so frequently involved. The second incision departs from the circle at a point about opposite to the axillary incision, and extends downward and inward toward the epigastric angle. One of the most important points that Handley has brought out is the necessity for heading off invasion of the abdominal cavity through the lymphatics of the epigastric angle. If the supraclavicular glands are involved, still another extension of the wound above the clavicle may be necessary in order to clean out these glands. So much for skin incisions. The further progress of the operation now consists in the removal of as much tissue, which may be involved, as is possible in any particular case. This means the undermining of the skin about the circular incision and the removal in one mass of the entire breast, with its over-lying fat and skin, and its underlying muscles, right down to the bony wall of the thorax. Also the surrounding fascia and fat and the contents of the axilla are removed entire, preserving their continuity with the tissue of the breast. This block dissection leaves behind the bony thorax, the

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axillary vessel and nerves stripped clean of all fat and glands, and the exposed surfaces of the latissimus dorsi, the serratus magnus, and the rectus abdominis, which have also been stripped of their overlying tissues. The reason for this tremendous removal of tissues, in what is apparently a needlessly awkward manner, is to endeavor to excise all the tissue which is microscopically invaded by cancer, without dividing any of the involved lymphatics, and thus running the risk of sewing cancer cells in the fresh tissues of the wound. The large defect left by this operation is closed either by skin grafts, or various plastic measures, which are not of essential interest to us just now. The important thing to know is, that if this method be carefully and logically executed, one may expect a reasonable percentage of permanent cures. This percentage, of course, varies from 75% in cases which are submitted to early operation, to 7½% in late cases. Clearly the efficacy of this method depends more upon early diagnosis than upon any other single factor. Presumably, if we could diagnose every case shortly after its onset, every one could be cured. However this is at present an impossibility. One can simply conclude that surgery at least offers a more certain hope of cure than any other method now known, and this hope of cure varies directly with the earliness of the discovery of the condition. In spite of the fact that more cures are obtained by operation than by any other method of treating cancer, every one must agree with the opinion which I recently heard expressed by a surgeon who was just in the middle of a breast case. He said: "This is certainly the most barbarous method which one could conceive of, and it is to be hoped that some better method will soon be devised to make such butchery unnecessary."

To summarize the whole question briefly: Early diagnosis and radical surgery represent the most certain and efficient treatment for cancer at the present time. Even this is far from satisfactory. There are many cases which are obviously beyond the aid of surgery; in such cases one may try trypsin, Coley's serum, blood transfusion, or any other of the numerous methods above mentioned, in the hope that he will by some chance benefit his patient, but these methods should never be adopted unless the case is too late for surgical intervention.

The X-ray and radium have a distinct place in the treatment of a limited class of cases, and possibly more may be hoped from them in the future. At present it is perhaps advisable to augment surgical treatment by the use of the X-ray, to make assurance doubly sure.

(Discussed in connection with following paper by Dr. Hugh Taylor.)

CARCINOMA OF BREAST.

By HUGH M. TAYLOR, M. D., Richmond, Va.

Professor of Clinical Surgery, University College of Medicine, etc.

In this city, and hardly beyond the sound of my voice, there exists an institution for the cure of cancer, which was established by, and is presided over, by a man who, as far as I know, does not claim to be a doctor; and yet I am willing to venture the opinion that there are at this time under treatment in that institution more cases of cancer than are treated by any three surgeons in this audience. Why is this true? And what should we do to remove this shameful reflection upon the regular medical profession, is the mission of this paper.

A moment's thought will bring into prominence the deep-rooted conviction, in the minds of the uninitiated that cancer is incurable, and any one

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who will advertise that he can cure it, and without the dreaded knife, will be received as one surely inspired. Is it not true that in our efforts to be strictly ethical, we have been remiss in not making it known beyond all question, not only that cancer is curable, but that it is more certainly cured by members of the regular profession? Since we have not enlightened the public, we should not be surprised at its ignorance of this subject. Not until we educate the public can we hope for active co-operation. Note the ready response in the fight against tuberculosis, typhoid, yellow fever, cholera, etc. What a blessing if we could inaugurate such a congress for the study of cancer as has just been held in Washington. By seeing the exhibits, by hearing the addresses and by reading the reports of the congress in the daily papers, millions have been educated as to tuberculosis. How few know anything about cancer! I venture the opinion that if on the streets of Richmond you stop ten of the most intelligent looking laymen you meet, and ask them if cancer is curable, nine out of the ten will answer no.

Some time ago as I left home to attend a society meeting, a member of my own family said to me, what are you going to talk about? I replied, "cancer." "What is the use?" she rejoined; "you can do nothing for it. You only make people nervous about it." Recently a friend said our minister (a man of culture) is much interested in a poor patient under treatment for cancer by Mr. Blank. "You know he puts on a plaster and draws it out by the roots." One of our local papers, an educational medium of acknowledged value, in discussing the beneficent outcome of the recent tubercular congress held in Washington, commented upon the fact that tuberculosis, unlike cancer, is curable.

The importance of educating the public along the lines I have mentioned is no new theme. Some of the best medical men of our times have thought it worthy of their best efforts, but what they have said and written has not reached the public and the masses remain in ignorance of the fact that we are curing thousands of cancers. The triumphs of preventive medicine are our pride in many fields, but in this, it is powerless, and cancer to-day, as it has done in all time, mocks our efforts to prevent its frequent occurrence. We are even powerless to stay its alarming increase. In the prevention of cancer we have done nothing. In the cure of cancer we have triumphed to an extent of which we should be proud, and it is our duty to let the victims of this horrible and wide-reaching scourge know of our ability to help them.

The United States census report for 1890 records 18,500 deaths from cancer; in 1900, ten years later, the death rate had assumed the enormous proportions of 29,500, an increase of nearly thirty per cent. in ten years—three times as many deaths as from all railroad accidents; more than from all the complications of child-birth; more than from lock-jaw, hydrophobia, sunstroke, all joint diseases and appendicitis combined. In Vienna it is claimed that it kills one woman in eight, and one man in twelve who reach the age of thirty-five. What is true of Vienna is true of Virginia. Is it cruel to remind you that one in twelve of the men before me, who reach the age of thirty-five, and that one in eight of your wives and daughters will be victims of this relentless destroyer of life?

That cancer is primarily local, that it is curable notably in its early stages, that it is difficult to diagnose in its incipiency, and is relentless in its demands on the patient's life unless treated radically are facts we should vigorously and unceasingly impress upon professional men and laymen. Think of it, 3,600 deaths from cancer of the breast in the United States every year. Recall the fact that ninety per cent. of tumors of the breast in women past thirty years of age are or will become malignant. I endorse the dictum of a master surgeon when he claims that "no tumor of the breast will ever be more benign than when first seen, and no tumor of the breast can be so benign that it may not become malignant."

Much as I should like to do so I shall not impose upon you a discussion of the etilogy, symptomatology, diagnosis and technique of the treatment of cancer of the breast; its voluminous literature is at the command of you all. What has been accomplished can be accomplished; what others have done we can do. What has been done in cancer of the breast is well summarized by Dr. Crile in his address to the surgical section of the American Medical As-

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sociation. This summary is based upon the published reports from the Hopkins.

"Forty-seven per cent. of all cases of breast cancer operated on have remained well three years or more. Considering only the cases that seemed at the time of operation to be clinically favorable, seventy-five out of every hundred were cured. A group of cases still more impressive is that consisting of those in which a clinical diagnosis of cancer could not be made prior to operation. Of these ninety-six per cent. remained well for three years or more. The operative mortality in the representative clinics to-day is less than one per cent."

I repeat, what others have accomplished we can accomplish, and such results fully warrant the dogmatic claim that surgery has triumphed in this field and it is our duty to let humanity know it.

Contrast these with other acknowledged facts as to cancer of the breast; not mercifully and quickly but through painful days, nights, weeks, months and years, it exacts the life of its victims. Eighty-seven per cent. of breast tumors are malignant; ninety-six per cent. are curable by sufficiently early operations—an operative mortality of less than one per cent. Only one in fourteen of breast tumors are benign, and in view of this last statement, are we justified in splitting hairs by trying to make a differential diagnosis? Curable in its incipiency, it yet entails a mortality of 100 per cent. when neglected. Medical men who study this subject know the possibilities of surgery. I contend that we should make it known to the poor sufferers that they can be cured by prompt treatment in ninety-six per cent. of cases.

DISCUSSION.

DR. J. SHELTON HORSLEY, *Richmond:* The main thing that has been brought out in both of these papers is the question of diagnosis and the question of education. The question of education is very difficult. It is very difficult to reach the laity directly. You will find in the transactions of any medical society where a paper on cancer is read, that though the daily papers may publish rather full abstracts of other subjects, cancer will be touched up very briefly. It is the same old question that Collier's has very frequently pointed out, because you will find these same papers carrying advertisements of cancer-cure institutions. How will we reach the public? It will be only through the physician. The duty of the physician is as much one of education as of healing. Until the physician begins to recognize that every tumor, no matter how apparently unimportant, is a thing of grave significance until the definite pathology can be settled upon, we cannot hope much from the laity. Too frequently in waiting to see what will happen, the cancer has made its inroads and the patient is doomed. In order to understand this question, we are bound to understand the pathology. The earlier the diagnosis is made, the better; but the earlier, the more difficult it is to make, Anybody can make the diagnosis in the late stages; the layman can make it, and there is no need for a diagnosis. We should all study these tumors ourselves, especially with the microscope. Whatever the cause, the essential element is the cancer cell that is the unit of the tumor, and whatever we do to destroy this cancer must destroy each separate unit.

Now, the X-ray and all other similar apparatus acts in just this way—by overstimulation. The cancer cell is more easily killed than the normal epithelial cell. Just as we take a horse out and exercise him a little and it will be beneficial, or we may drive him to death and kill him, so the X-ray and caustics will kill the cancer, because it is less hardy and has less resistance. The X-ray will kill cancer cells spread out on a flat surface, but on penetrating the surface loses its force, just as a bullet in a penetrating wound. Therefore it does not kill the deep cancer cells, but on the contrary may serve to stimulate their growth. So while the X-ray may be used advantageously, it is more frequently a source of very deleterious results, and frequently produces metastases, which I have seen very extensive in cancers at all deep.

The only treatment that seems to me universally applicable is the surgical treatment, and if you can get out everything that is involved, you have accomplished all that can be done for the patient. I have been using some-

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thing, not original with me—*i. e.*, after cutting out the cancer, cauterizing the remaining surface. If any cells are left, they can be sometimes killed by the caustic spread over the wound, and at the same time, it tends to close the mouths of the lymphatics.

DR. SOUTHGATE LEIGH, *Norfolk:* In regard to the use of the X-ray, I believe the public does need education, but I am afraid that some of our own members who are making a specialty of the use of the X-ray in the treatment of cancer are influencing the public in the wrong direction. I think that is what they ought to consider seriously. I believe that many people are being influenced to put off surgical operation for cancer, because they hope that the X-ray treatment will cure them, and when they do go to the operating table, it is too late.

DR. A. L. GRAY, *Richmond:* All of us have heard, and yesterday somebody referred to, the dread of the X-ray burn. We do not have them these days, with very few exceptions. In the treatment of an ordinary epithelioma, as Dr. Stone has well said, we carry the treatment to the point of an X-ray burn—what we ordinarily call a burn of the first or second degree when applied to heat. A localized X-ray burn is nothing serious. It is sometimes very painful, but it usually results in the cure of the malignant disease.

As to radium being cheaper and more easily localized, a piece of radium of sufficient strength to do good work will cost $300 or $400, and as Dr. Stone says, its life is perhaps two years. An X-ray machine has an indefinite length of usefulness, depending upon the care with which it is used. Localization of the X-ray may be done with almost, if not full, as much accuracy as radium with perhaps one or two exceptions—the treatment of the interior of the stomach, etc. We may gauge our dosage even better than can be done with radium. With the modern methods of measuring the dose of X-ray, we can predict within five minutes of the dose given as to when you are going to get the reaction.

I want to emphasize the fact that Dr. Horsley brought out, that the treatment of cancer beneath the skin to a depth greater than one inch is exceedingly doubtful and uncertain. Within an inch of the skin, the prognosis is far better.

In regard to treatment of cancer of the breast with the X-ray, Dr. Leigh stole my thunder when he said that the X-ray men were staving off operations. I would no more think of treating primary cancer of the breast with X-ray than I would attempt to treat smallpox, or play with any other exceedingly dangerous disease, without any hope whatever of doing good—not because it does not sometimes do it, because it certainly does, but because there is a point beyond which the deeper lymphatics and lymph nodes have become involved, and just when we reach that point, no one can tell. When a primary cancer of the breast is referred to me, I send her immediately to the surgeon, and advise an amputation, with treatment afterwards. I never give treatment preceding an amputation of the breast, for it is dangerous to tamper with time. There are many other cases of cancer that, just as Dr. Leigh has said, the enthusiast and non-conservative X-ray man will go ahead and treat, and treat, and treat, with the hope that after a while, he will see a little improvement, and finally it has gotten beyond the operative stage and the case is lost.

Referring again to the localization of the X-ray in these cases, I am beginning to-day treatment of a case of cancer of the sigmoid flexure. I propose to treat it through a sigmoidoscope. It is too high for a low operation, and too low for a high operation, and it being apparently localized, I shall attempt to cure this man. If it could be removed, I would say operate, and treat afterwards. I think it is just as important to look with the penetrating eye of the X-ray machine for cells that the surgeon cannot see, as it is to take out the big part, easily seen.

DR. HUGH M. TAYLOR, *Richmond* (concluding the discussion): This idea of educating the public in regard to this matter is not an original idea of mine. I recall a paper from Berlin a few years ago with reference to cancer

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of the uterus, in view of the fact that there were more deaths from this cause in the German Empire every year than there were men killed in the Franco-Prussian War. In view of the fact that cancer of the uterus was so commonly brought to the operating table in the inoperable stage, this professor, a noted student of this subject, demanded that we educate the poor woman so that she would come to the operating theatre at a time when operative intervention was possible. He advocated the education of the public through the newspapers, through the journals—however we could accomplish it.

I am sorry to say that I have seen some eleventh hour cases to whom iodide of potash had been given, upon which iodine had been placed, etc. Not always is it the fault of the doctor. We know of poor women who hug their grief to their breasts like the Spartan youth with the stolen fox. Why? Because they think it is inherited, and they do not want the blight of that inheritance to go down to future generations. Their education is essential. As Dr. Crile says, from 80% to 90% of all accessible cases, when operated on, are cured, lasting over three years; 100% mortality if let alone. Try all you please to diagnose with the microscope, but with the tumor outside.

NEW STANDARDS OF MEDICAL EDUCATION AND SOME OF THEIR RESULTS.

By R. H. WHITEHEAD, M. D., University of Virginia.

During the last fifteen or twenty years a movement has been going on in medical education which has produced such great changes that it is often described as a revolution. This revolution is still going on with results that seem likely soon to assume more or less definite shape.

Its leading features, as they present themselves to-day, may be summed up as follows: 1. Better preparation of students before admission to the medical schools. 2. Thorough training in the fundamental medical sciences by laboratory methods, the laboratory being regarded not so much as an end in itself, but rather as the means to a good understanding of the subjects studied, so that the student may have the power to keep abreast of the advances in after years. 3. Better training in the clinical branches of medicine by methods which permit and enforce a personal study of disease and its management in living people, so that the practical efficiency of the graduates may be increased. 4. The employment of trained teachers to whom teaching and investigation are primary, not secondary, considerations. 5. Reform in the methods of State examining boards, so that their examinations for license shall be not so much memory tests, as at present, but more practical in character, the applicant being required not merely to tell what he may remember, but also to show what he can do.

We have not time to consider all these particulars, and I shall ask your attention merely to a brief account of what has been done in the matter of preparation required of medical students, and to some results which may reasonably be expected to follow from the introduction of these requirements.

As the result of the agitation of this subject, two standards of preliminary education have come to the front. The one has been adopted by a great many State boards and by the Association of American Medical Colleges, and has also been endorsed as a temporary measure by the American Medical Association. It consists of a four-year high school course, or an equivalent amount of education, and is regarded almost universally as the least amount of preliminary education that ought to be accepted. It owes its power, in the main, to the fact that it has been adopted by so many State examining boards, and is, therefore, the *legal* standard over a great area of the Union, so that schools

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which require a less amount of preliminary education are not recognized in such States, and their graduates are not admitted to the examinations for license. It follows, therefore, that any medical school which desires more than a mere local patronage must enforce, at least, this minimum standard. The boards of several States have recently gone further than this, and will require the completion of two years of work in a college of arts or sciences before admission to the medical school. This action, however, was taken in order to support their home schools. A little reflection will show that we scarcely have the right to look to the boards for leadership in such matters. They represent the police power of their respective States, and exist solely to protect the public from incompetent practitioners of medicine. The problem they have to solve in most cases is not what constitutes the *best* education, preliminary or medical, but rather what constitutes *incompetency;* and their solutions of the problem oftentimes must and should be in the nature of compromises.

For leadership we must look to the schools themselves. Now, it has become somewhat fashionable of late to indulge in indiscriminate abuse of the medical schools at large, which, it seems to me, is misleading and not justified by the facts. On the contrary, the improvement in medical education as exemplified by our best schools exceeds that made in any other line of educational endeavor, and the instruction given in them is equal to any in the world. Upon the schools there rests the obligation of seeking for what is best and of trying to put it into effect—the obligation, in short, of striving to approximate ideals.

And this brings me to the second standard proposed, which, while its most active advocate is the Council on Medical Education of the American Medical Association, had its birth in the schools. According to this standard, something more than the usual high school education is necessary for the comprehension of such very difficult work as the modern medical curriculum has become, and the student should have the preparation, both in knowledge and in training, which is derived from good college courses in the sciences fundamental to medicine, *i. e.*, chemistry, biology and physics. This standard is already in force at a number of schools, and in 1910 practically every university medical school in the country will be requiring from one to four years of college work as a prerequisite to admission.

Now, a few words as to some of the results which may reasonably be expected to follow the wide adoption of these standards. It requires no prophet to see that they will lead to a great reduction in the number of medical students; indeed, the reduction is already going on. The number of students in the session of 1907-'8 was about 3,000, less than that of 1905-'6. Recently I have examined the statistics of twenty-one representative schools which have increased their entrance requirements within the past few years. In many cases the increase was only to a high school course, and required no amount of college work. The average reduction in attendance at these twenty-one schools at the end of the first two or three years after the introduction of the requirement was 42 per cent.; that is to say, these schools suffered a loss of nearly one-half of their students as compared with the enrollment before the raise in standard. It would be interesting, if we had time, to enter into some of the details of these statistics. For example, one school raised its entrance requirements to two years of college work. In the year preceding the introduction of this requirement the school had over 1,000 students—a number which, we may remark in passing, precluded the possibility of proper teaching; two years after the introduction of the requirement its enrollment had fallen to 450—a loss of 56 per cent.

These figures show plainly that in 1910, when the requirement of one or more years of college work will be in force at practically all the university medical schools, there will follow another enormous reduction in the number of medical students. It is possible that the attendance upon schools having lower entrance requirements will be actually increased, but, undoubtedly, the sum total of the output of doctors in the country at large is going to be much less in quantity, but much better in quality, which, doubtless, is as it should be.

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The second result to which I call your attention is not so comforting. The recent inspection of medical schools conducted by the Council on Medical Education has revealed quite a number, which, even under a very liberal system of grading, could not be regarded as doing acceptable work. The great majority of the States are protected against the graduates of such schools by the fact that their laws permit the examining boards to refuse recognition to them. On the other hand, there is a small number of States, and Virginia is one of them, whose boards are compelled by law to examine any man who graduates from a chartered medical school, which is the same thing as saying any graduate, since all medical schools are chartered. The graduates of these discredited schools being excluded from the great majority of the States, will gravitate naturally to the places of least resistance, and numbers of them will get by the boards if only written tests are relied on to stop them. It follows, therefore, that there is in the present situation a distinct menace, both to the profession and to the public of Virginia.

A NEW TREATMENT FOR HYPERTROPHIED PROSTATE.

By JAMES W. HUNTER, Jr., M. A., M. D., Norfolk, Va.

It is the purpose of this paper to present to the Society a new and practical treatment for that exceedingly common and distressing condition known as senile hypertrophy of the prostate. I refer to the employment of the Rontgen-ray, notwithstanding the fact that a distinguished member of this Society, and one of my fellow-students at the University of Virginia, in a recent article upon the radical removal of the prostate, disdainfully remarks of the Rontgenologists that "they have invaded this field also, but as yet they have accomplished nothing."

In a paper read before the Norfolk Medical Society and subsequently published in the *American Journal of the Medical Sciences*,[1] I reported the following case:

Mr. G., a carpenter, aged 80 years, a widower, suffered with a hyperacidity a large amount of pus, but no involvement of the kidney, though when a young men a calculus had been passed. Other history negative. In December, 1906, he exerted himself too severely while at work, and as a result had a severe orchitis. This yielded to treatment, but on February 2, 1907, there was beginning of prostatic symptoms, among others, a frequency of urination (arising as many as six times a night), with pain and burning about two inches from the end of the penis. In spite of treatment, however, the patient gradually grew worse, until April 15th, when he was able to void only about a half an ounce of urine at a time. There was also a marked phosphaturia and about 60 c. c. of residual urine.

About this time I decided to try the Rontgen-ray treatment as a last resort, operative intervention being manifestly out of the question.

May 2d, first exposure, twenty-five minutes.

of the stomach and chronic cystitis of eight years' duration, the urine showing

May 8th, second exposure, twenty-five minutes.

May 27th, third exposure, fifteen minutes.

comfort until June 27th, when the entire train of symptoms returned much

Internal medication was then stopped, and the patient enjoyed complete aggravated. He went to bed. On account of the patient's condition and his inability to make frequent visits to my office, it was decided to push the Rontgen-ray treatment as rapidly as possible.

July 6th, fourth exposure, forty minutes; some relief, but a slight toxemia, occurring as a delirium.

[1] American Journal of the Medical Sciences, January, 1898.

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July 16th, fifth exposure, thirty minutes; continued improvement, though a slight delirium still occurs; retains urine as long as two hours at a time.

July 23d, sixth exposure, twenty minutes; improvement continues; voids urine with very little trouble.

July 31st, seventh exposure, twenty minutes; retains urine as long as normal; only arises once or twice at night; feels as well as he ever did. No pain at urination, and passes large stream; a marked reduction in the size of the testicles.

August 12th, eighth exposure, twenty minutes; except for a large amount of urination in the early morning, the patient feels as well as he ever did; arises only once during the night; rectal examination discloses a prostate somewhat larger than an egg.

August 25th, ninth exposure, fifteen minutes; patient is symptomatically well; no untoward symptoms; rectal examination reveals a prostate only moderately enlarged; a marked atrophy of the testicles; urine is clear and unscented; the residual urine has been reduced to 15 c. c.

September 18th, tenth exposure, fifteen minutes.

October 29th, eleventh exposure, twenty minutes; the residual urine has been reduced to 8 c. c.

No further exposures were given, nor was any further trouble experienced until the middle of June, 1908, when the patient had a severe diarrhea, with considerable straining at stool. This frequency of defecation, together with old age and an increasing weakness, caused a return of the prostatic symptoms. He voided urine every half hour during the day, arose some six or eight times at night, suffered severe pain in bladder and penis and went to bed. The Rontgen-ray treatment was immediately begun.

June 29th, twelfth exposure, forty minutes.

July 1st, thirteenth exposure, thirty-five minutes.

July 3d, fourteenth exposure, thirty minutes; a slight relief.

July 12th, fifteenth exposure, forty minutes; a great improvement; patient rests better; does not arise more than three times at night, and requires less anodynes.

July 25th, sixteenth exposure, thirty minutes; save for an extreme weakness and a large amount of urination in the early morning, the patient is symptomatically well.

August 1st, seventeenth exposure, twenty minutes.

August 19th, eighteenth exposure, thirty minutes; the patient arises only once or twice at night, and is gaining in weight.

September 18th, nineteenth exposure, twenty minutes; the residual urine varies from 8 c. c. to 17 c. c.; patient remains well.

We have thus a total of nineteen exposures given during sixteen months upon a patient seemingly hopeless, resulting in two apparent cures.

So far as I am aware, this is the first case of hypertrophied prostate treated in this country by the Rontgen-ray, though a search of the literature shows excellent results by the foreign operators. Thus Gautier[2] declares that in his experience nothing equals the results obtained by the new method; Carabelli and Luraschi[3] report two cases entirely cured; Mosczkowicz[4] three cases, of whom all were much benefited, though two had complications; Tausard and Fleig,[5] two cases (one cured and one improved); and Schldgintweit,[6] fifty-three cases, of whom thirty were improved and twenty-three received less than four sittings. Including my own case, we have a total of sixty-one cases, of which twenty-three received insufficient treatment. Of the remaining thirty-eight there were thirty-six improved, and two followed by complications. As these were treated through a rectal speculum, it is easy to see that the technique, and not the ray, was responsible. As the case reported is a typical one, it may not be out of place to compare the rontgenological with the medical treatment, as under the latter no permanent good was accomplished, although faithfully tried. Yet it is only fair to state that on account

[2] Brazil Medico, Rio de Janeiro, 1902, XVI, 403.

[3] Gazetta degli Ospedali Milano, abstracted in Jour. Amer. Med. Assn., September 2, 1905.

[4] Munch Med. Woch., 1905, LII, 730.

[5] Annales des maladies des organes genito-urinaires, 1902, XXIV, 1841.

[6] Ztschr. f. Urologie, Band I, Nr. 1, 51-53.

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of the patient's stomach, the balsams, ergot and methylene-blue were not given. Nevertheless, I may add that boric acid, hexamethylene, citrate of potash, benzoate of soda, bromide of soda, lithia, hyoscyamus, atropia and codein were tried both individually and collectively. Of all, only three drugs seemed to accomplish any result—lithia, atropia and codein. Once benzoate of soda afforded ease, only to fail upon a second trial. Cold applications, hot applications, catheterization and irrigation gave more or less temporary relief; yet the patient grew steadily worse.

On the other hand, the case was entirely unfitted for surgical intervention. I believe that any operative procedure would have been followed by an immediate death. The patient's physical condition was exceedingly poor. At no time has the urine been absolutely satisfactory. Phosphatic odors necessitated the addition of water and deodorizers to the voided urine; there has also been more or less mucus and pus. Moreover, while I have never been able to find a lesion of the kidneys, it is a significant fact that a slight amount of alcohol, medicinally administered as a tonic prior to the patient's illness, had to be withdrawn, and that even now more than two drachms of the best French cognac will derange the patient's urinary system. If now we add the confinement in bed after a prostatectomy, cystotomy or Bottini operation, together with the necessary amount of dressing and irrigation, we shall perceive a case from the operative standpoint absolutely hopeless.

It is useless to enter into an elaborate discussion of the technique employed by the various operators; but I may say that, after a careful and extended study of my own case, I believe it necessary that the full physiological dosage should be given. Personally, I use an eighteen inch coil, with two layers of the primary connected in series, a mercury or Wehnelt interrupter, a moderately high and well seasoned tube, and from 2.00 to 3.50 ampères of direct current at 110 volts. This gives a reading of from ½ to 1.90 on the miliampèremeter in the secondary circuit. The patient is placed in Sims' position, and the light directed upon the perineum, the surrounding parts being protected by lead foil, although in old patients (as in the case reported) I would also expose the scrotum.

I do not mean to imply that in the Rontgen-ray we have a specific for every case of hypertrophied prostate, but I do claim that we have a new and effective treatment—one that, though requiring the skill of an expert, is without danger and without mortality. In view of the complete failure of the medical treatment and of the high mortality attending surgical procedures, this is saying much. Personally, I believe it better suited to cases of the first or second degree of prostatic hypertrophy than where there has been much sclerosis. Yet even these should not be refused. The Rontgen-ray has amply demonstrated its ability to reduce the size of soft fibromata. The new treatment bids fair to cure all but the oldest and hardest prostates. In careful hands it will be followed by brilliant results. In my own, it has twice snatched from the grave a patient, from our present viewpoint, medically and surgically, hopeless. And this in spite of the distinguished author, who calmly remarks that the "rontgenologists have invaded this field also, but as yet they have accomplished nothing!"

DISCUSSION.

DR. A. L. GRAY, *Richmond:* I think Dr. Hunter deserves a great deal of credit for his persistency in the treatment of the case. I cannot feel that we can hope for very much in hypertrophy of the prostate from X-ray treatment, for the reason that one of the most resistant tissues we have is the fibrous or scar tissue. In a case of enlarged prostate, there is hypertrophy chiefly of the fibrous tissue, while there is in many cases a slight hypertrophy of the glandular epithelium also. The X-ray seems to have a specific action on glandular epithelium, and so far as the hyperplasia of these cells is concerned, I think the X-ray may benefit to a considerable extent.

I hope I am very conservative in the use of the X-ray, and I do not think we ought to jump at conclusions too rapidly, and consider a *præter hoc* cure a *propter hoc* cure. While it looks very strongly that the X-ray has produced the wonderful effect Dr. Hunter claims, still it requires a number of such

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cases to establish the fact, and I hope Dr. Hunter will give us reports of many more cases benefited or cured by this method of treatment.

DR. S. G. SLAUGHTER, *Lynchburg:* In the enlarged and congested prostatic gland we ought to go a great deal more on the diagnosis in the case. It is not that we should treat the case because of the local symptoms alone, but because of the constitutional symptoms as well. The cause is not only in the local infection, but it also follows after the congested and lazy liver, constipation, etc. If we would stop to think about the nerve supply of the hypogastric and sympathetic nerves, we would see a more direct relation between these very obscure symptoms we have of insomnia, indigestion, pain in the back, etc. If we would carefully examine the rectum, and there find symptoms of internal piles, and congestion involving the sympathetic nerve, we would be able to relieve a great many. The surgery has certainly been disappointing. A few men are very successful, and yet when the cases come back to our towns, we find that they were not so successful as they seemed. With the vast majority of surgeons it is an absolute failure. Now, with the X-ray and frequent white light, a certain amount of success has been attained. Massage of the prostate gland has certainly been a disappointment. But we can relieve the majority by what is called the static wave electricity. I want to say positively and absolutely that that has proved a most positive aid in nearly every case I have had, and that is the experience of nearly every man who has conscientiously used that method. I do not mean a positive cure: I mean a symptomatic cure. Every symptom has been relieved by that treatment.

DR. R. I. HICKS, *Culpeper:* At last we have a sure means of cure, attended by very little mortality. It is by removal of the gland. As long as we can do that, I think we had better not run the risk of other means. The only sure and certain cure is as in cancer, by removal, and removal early. This can be done, as it has been done, and will continue to be done, with very little mortality, and we had better not allow ourselves to be led away by new remedies, which will soon be laid aside and given up because of the failures.

DR. JAMES W. HUNTER, *Norfolk* (concluding the discussion): I do not propose to cure every case, or even a small percentage of them by this means. I merely give you the facts of the case in my own experience, and as far as I can find in the literature. In the particular case referred to, I will simply say that the patient, an old man eighty-one years of age, his condition has always been bad. From what I have told you of the effect of alcohol, surgery was absolutely out of the question. I tried medical treatment, and had told the family that it seemed but a question of making him comfortable. In my despair, I read an article in the *American Journal of Medical Science*, and put it up to the family. The man, to-day, is well symptomatically. The prostate has been reduced, the symptoms disappeared, and the residual urine has also come down.

Of course I fully agree with Dr. Gray in what he has said in regard to the pathology, and I do think that the types of the first and second degree are much more favorable.

Dr. Hicks speaks of the operation and the low mortality. That may be the case with certain operators who select their patients, but it is a funny thing that a great many of these cases who do not die on the table, die from one to six months after of the old trouble, and I can mention the names of several.

In a case of hypertrophy of the prostate, where medical treatment has proved almost a complete failure, and not suitable for surgical intervention, I believe the patient is entitled to every available remedy, and in my experience and in that of the authorities quoted, the results have been very happy, and at least there has been no mortality.

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BLADDER WOUNDS IN HERNIA OPERATIONS.

By WILLIAM BURTON DE GARMO, M. D., New York, N. Y.

Professor Special Surgery New York Post-Graduate Medical School and Hospital; Honorary Member of the Medical Society of Virginia.

Operations for the cure of hernia, so rarely done at the date of my first visit to this Society, are now performed almost daily by your various members in different parts of the State. This remarkable increase in the frequency of the operation has demonstrated the fact that the presence of the bladder is a frequent complication, and that it is only by the most extreme caution that its injury, while operating, can be avoided.

In the *Annals of Surgery*, June, 1895, Dr. B. F. Curtis, in a classical paper on the subject, reported fifty-eight cases of this accident collected from three hundred years of medical literature. In the next *two years* forty-five cases were reported (Dr. C. C. Gibson, *Medical Record*, March 20, 1897), while up to the present time this number has advanced to 300, and it is believed that this does not represent more than one-half of the accidents that have actually occurred. This rapidly increasing number of accidental injuries to the bladder wall does not necessarily indicate careless or unskilful operators, but is a natural result of the vast number of operations being done by many different surgeons.

As, according to Gibson, these accidents are attended by a mortality of 12%, it seems quite advisable that a warning note should be sounded. The success of present-day operations for the cure of hernia has been demonstrated, and now all dangers should, so far as possible, be eliminated.

The protrusion of the bladder with hernia, or alone, occurs in patients of all ages and in both sexes, but is, in my experience, most liable to be found in fat men over fifty years of age, who have direct inguinal hernia.

When we consider the anatomical relations of the parts, it seems quite reasonable to expect that the bladder should protrude with hernia, or independently as hernia, rather frequently. When empty, the organ lies wholly within the pelvis, but when moderately distended, as shown in the diagram, it rises above the pubic bone and broadens out so as to come directly back of the external abdominal ring. It is embedded in loose areolar tissue, which is continuous with the extra-peritoneal layer of fat. When the peritoneum is forced through either the inguinal or femoral canal, the natural tendency is to drag the bladder with it. The organ may therefore either protrude secondary to the formation of hernia, or, when distended and under severe muscular strain, following the direction of least resistance, it is forced through the canal. In the latter case that portion of the wall not covered by peritoneum is most likely to protrude, and is, therefore, readily mistaken for hernial sac.

Normal bladder wall on section presents, from within outwards, a mucous, submucous and muscular coat with a fibrous covering at those portions covered by peritoneum. In the cases under consideration, however, it frequently happens that the mucous and submucous layers are forced through between the separated muscular fibres of the bladder wall, and present thin sacculi, having every appearance of hernial sac. One surgeon saw fluid so distinctly through such a sacculus as to feel convinced that he was dealing with hydrocele of the cord, and others have found such diverticuli so changed in character from true bladder wall as to be unable to recognize them after they were opened.

These bladder protrusions may be classified as follows:

(a) Extra-peritoneal: protrusion through one of the hernial openings of that part of the bladder wall covered only with areolar tissue.

(b) Intra-peritoneal: bladder wall covered by peritoneum is dragged down *into* the sac by preceding abdominal viscera.

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(c) Extra and intra-peritoneal: where a portion of the wall is covered by peritoneum and another part is not.

Two-thirds of all cases are of the first, or extra-peritoneal, type.

Pre-operation diagnosis is rarely made. Any symptoms suggestive of bladder trouble in a patient who also suffers from hernia, should cause suspicion as to the true condition. Pressure of the hand upon the tumor may cause a desire to urinate, or, as in one of my cases, the patient could not satisfactorily complete urination without compressing quite forcibly a large scrotal hernia from which he suffered. Another, a physician, experienced irritability of the bladder while his hernia was protruding, that was relieved by truss retention. Bladder hernias, even of large size, show little tendency to drop into the scrotum, usually present the appearance of direct inguinal hernia, and frequently are slow and painful to reduce.

It must not be lost sight of, however, that even in cases of extreme bladder involvement, there may be no symptoms present pointing towards that organ.

Diagnosis at operation: If the surgeon has had a suggestion of the presence of bladder before operating, he will seldom make a mistaken diagnosis at the operating table; but unfortunately it is unusual that he is forewarned. For this reason he should never enter a hernia operation without having in mind the possibility of bladder complication, and it is probable that even then, if he is a frequent operator, he will some day mistake a diverticulum of the bladder for a hernial sac.

Some of the things that should excite suspicion at the operation may be mentioned. A hernial sac that comes out immediately above the pubic bone on the inner side of, or behind, the cord, should be under suspicion of being bladder. If covered with a light lemon colored (pre-vesical) fat, from which it can be separated with difficulty—*i. e.*, it does not "shell out" easily, the diagnosis may be quite positive.

Vessels of large size are rather common in this pre-vesical fat, but seldom seen in the fat coming into the canal with a true hernial sac.

Bladder diverticuli usually form strong adhesions to the surrounding tissues. Do not watch for normal bladder wall, as it will seldom be seen in this position.

A sound passed per urethra has, in several of my cases, entered the tumor and confirmed suspicions, but this is not infallible, as the neck of the sacculus may be too small to admit it.

The one procedure that has proven of the greatest service to me in recent years, and that requires the least time to carry out, is to open into the abdominal cavity high up in the canal and examine the tumor from inside the abdomen. In a few moments this gives the operator an exact diagnosis, and he can complete the operation without hesitation or fear.

Where the bladder has already been wounded, the appearance of the mucosa, when recognizable, or the presence of urine, will usually notify the operator as to what has occurred. The literature on the subject shows, however, many cases where the bladder has been punctured with a needle, cut into in cutting away the sac, picked up, tied and cut away for loose fat, and even the urethra and a portion of the bladder have been ligated and cut away; and these accidents were not discovered until there was leakage of urine through the dressings or blood in voided urine. In two reported cases only at the autopsy was it discovered that death was due to hemorrhage and extravasation of urine into the abdominal cavity from unseen bladder wounds.

The finding of the bladder while operating for hernia, especially if one is unfortunate enough to open into it, will cause the unprepared operator much concern and delay, and will add seriously to the danger incurred by the patient. Even when not opened, it must be disposed of in a manner to avoid recurrence of the trouble.

The three forms of bladder protrusion met with have already been mentioned, the extra-peritoneal being the most common, and, at the same time, most liable to injury. In this form the bladder protrudes low down inside of the cord as a round tumor with a broad base, and entirely free of peritoneum. In this form I have resorted to two different methods according to convenience. In the first the bladder protrusion is carefully freed from adhesions by blunt dissection, its apex carried well towards the median line,

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and anchored there by suturing the pre-vesical fat to the conjoined tendon. This is done by passing the blunt end of the needle first through these tissues, and, if carefully executed, is attended by little risk to the bladder wall.

My preference, however, is for what I have called the method of "inversion." A purse-string suture of catgut is placed in the fatty tissue around the neck of the tumor, after it has been freed from adhesions. The sacculus is then inverted by pushing it into the bladder with one finger. The purse-string suture is drawn tight and tied, thus closing the opening in the muscular wall through which the mucosa protruded, without opening into the bladder. I would recommend this method in all cases where the tumor has an appreciable neck, reserving the other for those with an extremely broad base.

If the bladder is not injured, after freeing the canal of its presence, the completion of the operation and the subsequent management of the case should be in every respect the same as for an uncomplicated hernia.

There is considerable difference of opinion regarding the suture material that should be used in the closure of bladder wounds; some preferring catgut, others silk or linen, and still others a combination of an absorbable suture with one that is fairly permanent.

Dr. Howard A. Kelley (Resections of the Bladder in Rebellious Cystitis, *New York State Journal of Medicine*, April, 1906, p. 145) advocates in resections catgut sutures through the entire thickness of the bladder walls, reinforced with a second row of fine silk sutures. Charles H. Mayo closes bladder wounds with catgut protected on the outside by linen sutures. Gibson advises tier sutures, preferably of silk.

In my recent work on hernia (*Abdominal Hernia*, J. B. Lippincott Co., Philadelphia), I have reported twenty cases in which I found the bladder in operating for hernia. In one the bladder was mistaken for a hernial sac and cut into. My closure in that case was by continuous suture of small catgut, carefully placed in the submucous coat, fortified by two layers of fine silk. Recovery was prompt, but a few weeks later supra-pubic prostatectomy became necessary and both walls of the bladder were cut open. The interior of the bladder was then examined for evidence of the previous injury, but none found. Months later, however, attended by the usual distressing symptoms, a vesical calculus was diagnosed and crushed. In fragments of the stone was found a piece of silk used in the first operation. Still another piece became encrusted and was removed later. My own opinion is that, had not the bladder wall been disturbed by the second operation, no trouble would have resulted from the silk, but this cannot be proven, and leads one to feel considerable concern when placing silk in this location.

It must not be forgotten, on the other hand, that extravasation of urine from faulty repair is attended by a high mortality, and, personally, I should have more fear of leakage than of trouble from carefully placed silk.

No matter how small the wound made in the bladder, it must be closed with extreme care. Unobserved needle punctures have resulted in the death of the patient.

One other point should be carefully considered, and that is as to the advisability of leaving a catheter in the urethra continuously for three or four days, or relying upon frequent catherization. The concensus of recent opinion seems to favor the latter. Personally I should, in the future, advocate the permanent drainage per urethra for at least forty-eight hours, and even a longer time where the wound has been intra-peritoneal. In my own unfortunate case, however, there is little doubt that the presence of the catheter caused, or hastened, the prostatic conditions which made the second operation necessary.

CONCLUSIONS.

1. If there are bladder symptoms associated with hernia, anticipate the presence of that organ.

2. The bladder may be found with inguinal or femoral hernia, in the male or female, at any age.

3. It is most frequently found in fat men of middle life, who have hernia of the direct inguinal type, that protrudes by a broad base, with little tendency to drop into the scrotum.

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4. Hernias of this type that reduce slowly and painfully, are especially dangerous for operation. They probably contain either bladder, or large bowel, not covered by peritoneum.

5. When the canal is opened by operation, if two sacs are found, that nearest the pubic bone and towards the median line is likely to be bladder.

6. In doubtful cases it is safer to open the peritoneum at the internal ring and explore the sac from within.

7. It is believed that accidental wounds are best repaired by uniting the submucous coat with small plain catgut, infolding the tissues and closing the outer coats with fine silk, tying as few knots as possible.

8. Urethral drainage by retained catheter for twenty-four or forty-eight hours is thought to count for the safety of the patient.

DISCUSSION.

DR. GEORGE BEN JOHNSTON, *Richmond:* For a great many years we had no operation which was efficient in the cure of hernia. There were a number of operations, but until Bassini developed and promulgated his operation, we had none based upon anatomical conditions, and which was truly scientific and efficient. Now we have at our disposal the Bassini operation and its modifications, which render hernia curable, and such a very large percentage of cases are curable in the hands of competent operators that it seems the duty of the physician to make known the ability of the surgeon to cure this disqualifying, painful and dangerous condition. I am afraid we are somewhat indifferent in that respect. We allow the apothecary or the instrument man to fit a truss, and we permit people to go by us daily with knowledge of the fact on our part that they are the victims of hernia, without warning them of the dangers of hernia, and without indicating to them the ability of surgery to cure hernia.

Now, this operation, in the hands of a competent operator, is exceedingly satisfactory. I think 97%, perhaps, of all hernias are curable in the hands of a competent operator, and the death rate from such operations is not more than one-tenth of one per cent., so that it is an extremely safe and a very sure operation. But it is neither safe nor sure except in the hands of men who are daily operating. It is not an operation which should be undertaken by the infrequent, occasional operator. I mean, unless the individual has served an actual assistantship, and has seen innumerable cases of hernia operated upon, knows how to identify structures, and knows every single detail of the operation from a practical standpoint, he will not accomplish what he starts out to accomplish. The patient will get well from the operation, but the hernia will not stay cured.

Now, I know of few things more difficult than the recognition of a bladder wall in a hernia. It is subject to so many variations, to so many changes in condition, that it is a most difficult thing to identify a bladder wall. Now, the occasional operator does not think of the likelihood of encountering a bladder wall in a hernia. He studies the operation from a text-book, and tries to perform a text-book operation. If everything is right, if the subject is a good one, if the sac is one easily extracted and isolated, if the cord is a small one, he succeeds admirably. But if the hernia is an old one, the anatomical structures altered, the recognition is a difcult thing. It is a great deal more difficult to recognize a bladder wall than any of the ordinary structures found in a hernia. My experience has been, of course, infinitely smaller than that of Dr. De Garmo, but at the same time, I have encountered this complication, and I am prepared to say that I do not know any operation in surgery that can better afford a few minutes of great anxiety than to encounter a bladder wall in a hernia; and again, I do not know how a man could have greater anxiety than to be unable to determine whether it is or is not a bladder wall. The chances are, if it is a bladder wall, he may deal with it in a very unfortunate way. I think Dr. De Garmo's paper an exceedingly valuable one, and I regard it as a valuable caution to those gentlemen who have looked upon the operation as a very simple one, and one in which difficulties are not likely to be encountered.

DR. J. W. BOVEE, *Washington, D. C.:* I wish to speak of two points brought out by Dr. De Garmo, one of which is the suture of the bladder wall. Incised

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wounds in the bladder wall heal very kindly, provided tension is avoided during the process. I therefore feel that Dr. De Garmo is quite right in advising the employment of a permanent catheter for the first forty-eight hours, and I would also add to that, other points to be followed after forty-eight hours—namely, catheterization frequently (once in four hours) for the next two or three days. At the same time, I am very cautious about the amount of water or other fluids in the intestines—*i. e.*, to decrease them as much as is in keeping with the comfort of the patient. I have found, in injuries of the bladder, sutures of catgut and kangaroo tendon are the most reliable materials. Dr. De Garmo has told us the results of using silk in this one instance he mentions. That is not at all uncommon. It is not uncommon, as well, in looking over the literature of abdominal hysterectomy in which silk is used, to see that months, perhaps a year or two after the operation, the patient gets over a severe attack of cystitis or other inflammatory condition by passing a silk ligature. I therefore feel that no firm material should be used in the bladder wall. Catgut or kangaroo tendon will last a sufficient number of days. It is very much better not to pass the sutures through the mucosa, because cases are on record in which calculi have formed with these sutures as a nucleus.

The other point involves the invasion of the peritoneal cavity in order to establish a diagnosis. Some might question the advisability of such an invasion, preferring the introduction of a sound. If passed into the sac, or if the sound comes to the ring of the sac, it would be quite plain that it was a sac. It is not often in hernia that the technique is one of absolute cleanliness. If left in the hands of someone not clean, you have the danger of carrying infection into the wound.

DR. B. L. HILLSMAN, *Richmond:* I know of nothing more mortifying or disconcerting than to have this accident to the bladder. I did it about two weeks ago, and am gratified to learn that so distinguished a surgeon as Dr. De Garmo has had the same experience. The case was a large, fat woman, the bladder having been pulled down by a large piece of omentum adhering to it. I sewed the wound up in tiers, using catgut in the mucosa and silk in the external coat. I have had no trouble, the wound healing kindly, with complete cure of the hernia.

DR. W. B. DE GARMO, *New York, N. Y.* (concluding the discussion): As Dr. Johnston has said, many men who do very little surgery have an idea that they can do hernial surgery. That unfortunate idea is confirmed by witnessing operations which go off perfectly smoothly, and it seems a very simple thing. When they meet with complications, they find that hernia is not such an easy thing to operate on after all. They forget that those operations which they see are done by men trained to the work, with a crew surrounding them also trained to the work.

GALL BLADDER OPERATIONS.

By E. M. MAGRUDER, M. D., Charlottesville, Va.

Operation upon the gall bladder is performed for various affections, as pus in the gall bladder, tuberculosis, malignant disease, etc., but the affection most frequently demanding surgical interference is gall stones, to which the scope of this brief paper will be limited.

A discussion of the anatomy and pathology of the gall bladder, with the details of the various operations upon this organ, is not intended, as this can be found more ably presented in the numerous text-books. My object is simply

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to offer a few suggestions pertaining to the choice of operation in cases of gall stones, founded upon a modest experience.

In the choice of an operation for any affection several points are to be considered, as danger to life, facility of performance, duration of operation, permanence of relief, etc., all of which must be taken into account in the selection of a curative measure. Of course, the prime object with every surgean is to cure *tuto et cito et certe et jucunde* (safely, quickly, certainly and pleasantly), but there is great diversity in the degree of relief afforded even by surgical methods. This is none the less true with operations for gall stones, the cause for which is the frequent post-operative persistence of the etiological conditions.

The conditions that predispose to the formation of gall stones are:

1. *A reservoir* for the storage of bile.

2. *Concentration* of bile due to maximum ingestion of liquids, maximum ingestion of food, and obstruction to outflow.

3. *A sedentary life* conducing to defective metabolism and elimination, incomplete emptying of the gall bladder, and sedimentation of solid bile constituents, with breaking up of this sediment into concretions of different sizes.

The ideal operation for any disease, not otherwise curable, is one that entirely removes the trouble and renders its recurrence impossible; therefore, in case of a multiplicity of operative methods for a given affection, that one should be chosen which gives the best promise of permanent relief without too much risk to life.

For cholelithiasis there are three operations that may be employed:

1. *Cholecystotomy*, which is incision into the fundus of the gall bladder, removal of stones and immediate closure of the opening. This procedure incurs the risk of leaving behind one or more concretions which would require subsequent removal.

2. *Cholecystostomy*, which is incision into gall bladder, removal of stones, and then suture of the edges of the incision to the margin of the abdominal opening, with the insertion of a drainage tube. This allows opportunity for the expulsion of any stones that may be left behind, with drainage in case of infection. The tube is used for several weeks and then dispensed with, and the sinus allowed to close.

Both of these operations are open to the objection that after the closure of the wounds there exist the same conditions as before for the formation of concretions, and there is strong probability that a second operation and even a third will be needed. (See case below.)

3. *Cholecystectomy*, whch is entire removal of the gall bladder. This operation not only rids the patient of the cause of the annoyance, but gives permanent relief by removing the facilities for recurrence. The bile, loaded with solids like muddy water, instead of being stored up in a sedimentation basin, is poured directly into the intestine and there disposed of without the means of further harm.

In my own experience, which is, however, a limited one, I have not found the radical removal of the gall bladder, as compared with the more popular operation of cholecystostomy, attended by greater difficulty, greater consumption of time, or greater risk to life, while the relief is absolutely permanent.

Case. Mrs. M., a naturally strong and vigorous woman, about thirty-five years old, was much reduced in health by cholelithiasis, suffering excruciatingly with frequent attacks of hepatic colic accompanied by chills, jaundice, characteristic pain and soreness, clay colored stools, biliuria, etc.

Cholecystostomy was performed and a large, irregularly shaped concretion removed, followed by the expulsion of much gritty matter during the drainage period. There was perfect relief for about three years, when the symptoms returned and the suffering was as great as before. The same operation was performed, but the presence of a great amount of adhesions made it very difficult to find, and impossible to remove, the gall bladder, from which, however, several stones were extracted and one from the cystic duct. After two years of comfort and well-being the patient was affected as before and was anxious for another operation. She was warned that it would be undertaken solely on account of her miserable condition, and that it offered only a forlorn hope with great risk to life. She preferred the risk to a life of torture.

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When the abdomen was opened a third time a perfect wilderness of adhesions was found, from which it was impossible to differentiate the gall bladder. Far back under the liver towards the posterior wall, however, after a great deal of difficult manipulation, two hard masses were felt with the finger, one of which was removed. Repeated attempts to dislodge the remaining stone proving futile, and the intestines having already been seriously damaged, the wound was closed with drainage, but death occurred in twenty-four hours.

This experience with the more popular operation of cholecystostomy has militated with me vastly in favor of the more radical operation of cholecystectomy.

DISCUSSION.

DR. SOUTHGATE LEIGH, *Norfolk:* I do not agree with Dr. Magruder in advising the removal of the gall bladder in every case. In the majority of cases, I think it is best to leave the gall bladder and drain. I would impress the importance of thorough palpation of the ducts, in order, as far as possible, not to overlook any stones.

GASTRO-ENTEROSTOMY FOR ULCER OF THE STOMACH OR ITS SEQUELÆ—REPORT OF ELEVEN CASES.

By GEORGE TULLY VAUGHAN, M. D., Washington, D. C.,

Honorary Member of the Medical Society of Virginia; Formerly Assistant Surgeon General U. S. Public Health and Marine Hospital Service, etc.

Gastro-enterostomy means the making of a communication between the stomach and any part of the intestines; but to make the meaning clearer the name of the part of the intestine used is often given; thus we have gastro-duodenostomy, gastro-jejunostomy and possibly gastro-ileostomy.

The operation was first performed successfully by Wolfler in 1881, and during the first four or five years it was practiced the mortality was as great as the present mortality for suturing wounds of the heart, namely, about 66 2-3 per cent. Of the various operations performed the one most practiced is the von Hacker, with Peterson's modification; that is, a union between the posterior surface of the stomach and the first parts of the jejunum without a loop. It makes no difference whether the course of the jejunum, its peristaltic wave, corresponds with that of the stomach or not; the main point is to use it so that there will be no loop, and at the same time not have any tension on the parts and avoid any kinking. For this reason it seems to me best not to turn the jejunum around so that its downward curve shall point to the patient's right instead of to the left, as it does naturally, but to bring it straight up without turn into approximation with the stomach. Two things may prevent this. First, the location of the pylorus too far to the right, and, second, the location or extension of Treitz's ligament too far to the left. Treitz's ligament may be partially divided, as suggested by Mayo, taking care of the inferior mesenteric vein and left colic artery. If it fail, the jejunum *must* be turned forward and towards the patient's right, making a short loop, the wave then corresponding with that of the stomach. I prefer to do the operation without the use of clamps, as I think the traumatism is less and complications less likely to follow. The union should be made by sutures, silk preferably, and the opening should be two and one-half to three inches in length, and a few sutures should unite the two viscera for a short distance—say, half an inch or more beyond each end, in order to prevent acute flexion of the jejunum and possibly

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obstruction and the "vicious circle." The inside suture should penetrate all the coats of the viscus, and the outside one should omit the mucous coat only.

Gastroduodenostomy was first done by Jaboulay, but is not much used at this time in its original form, as it is often impossible to get room for a large enough opening; but in the form of pyloroplasty; the Heinecke-Mikulitz operation and the Finney operation, from which it differs very slightly, it is used considerably, and will probably be used more and more in the future. In gastroduodenostomy, as done by Jaboulay and Kocher, a communication is made between the stomach and duodenum by means of two separate openings—one in each viscus, the margins of which are sewed around to each other.

In pyloroplasty only one incision is made—a long one, which slits the pylorus, incidentally dividing any stricture which may exist, and passing into the stomach and duodenum. Then the margins are united to each other all around, as in the former case. In the one operation the pylorus is excluded, and in the other it is included in the new opening or the enlarged opening made. This operation was first done by Heinecke as a straight incision through the stricture, then bringing the margins together at right angles; was modified in 1887 by Mikalicz by extending the incision downward on each side into the stomach and duodenum, respectively, horseshoe-shaped, and is now called the Heinecke-Mikulicz operation. In 1902 Finney modified it slightly by increasing the size of the opening and suggesting a different method of suturing.

Pyloroplasty or gastroduodenostomy would seem to be the best of all these operations, because it leaves the viscera in a more nearly natural relation than any of the others. Food still passes through the duodenum, and comes in contact with the bile and pancreatic juice in a normal way. There is no danger of a vicious circle forming or of intestinal obstruction following on account of misplaced viscera or abnormal openings. Peptic ulcer has never been known to follow it, although it does follow gastrojejunostomy in about 2 per cent. of cases (*Mayo-Robson*). It is the ideal operation in pyloric stenosis from ulcers which have healed and in which the dilatation of the stomach is not excessive.

It is not as good an operation as gastrojejunostomy in—

1. Fresh or bleeding ulcer, in or near the pylorus.

2. In enormous dilatation with atony of the stomach when the opening will not be at the most dependent part.

In suitable cases the difficulty of performing the operation does not seem to me to be greater than in gastrojejunostomy. Adhesions or an abnormally bound down duodenum may be contraindications.

There is still some want of harmony between the physician and the surgeon in the treatment of gastric ulcer, and it would be to the best interests of the patient if they could be induced to work together and each to recognize and admit his limitations. That there is room for both cannot be questioned. Let us again quote Mayo-Robson: "Leube has said that one-half or three-fourths of all cases of gastric ulcer will be cured by four or five weeks of medical treatment, but if not cured in that time they will not be cured by medical treatment alone. In this view I thoroughly agree."

Considering the number of cases which relapse after relief or apparent cure, he concludes that the number of real cures by medical treatment is under 25 per cent., so far as reported cases go, while with surgical treatment, although these are usually the worst cases and those which have resisted cure by medical treatment, the number of cases cured or completely relieved of all symptoms was over 90 per cent.

Cases.—I have operated on eleven patients, in five doing a pyloroplasty somewhat according to Finney, and in six doing a posterior gastrojejunostomy without a loop. There were no deaths, and all patients were cured or very much benefited by the operation. Following is a sketch of the patients:

Case No. 1.—T. S., white male; aged 58 years; clerk; had been troubled with his stomach for thirty years, but especially during the last ten years with nausea, vomitting, heartburn, abdominal distension, hyperchlorhydria and intermittent pulse at times. His normal weight is 175 pounds, and at time of operation he weighed only 130. Pyloroplasty May 14, 1903. In less than three months he had gained forty pounds in weight and ate everything. At present,

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five years after operation, he is in pretty good condition, but occasionally regurgitates, and has to use lavage.

Remark.—There was marked pyloric stenosis. I think in this case a gastrojejunostomy would have been better, as the stomach was very much dilated, and this would have given more complete drainage.

Case No. 2.—M. K., white male; aged 35 years; inmate of Government Hospital for the Insane; had been vomiting for eleven months, and had lost about sixty pounds from his normal weight of 135 pounds. December 14, 1905, posterior gastrojejunostomy without a loop. Patient soon regained his normal weight, and is now apparently perfectly well, as far as his stomach is concerned. Almost complete obstruction of the pylorus was found, caused by a mass of unknown origin.

Case No. 3.—Mrs. C., white female; aged 34 years; nurse; had been troubled for several years with excessive formation of gas in stomach, and had lost in weight and become thin and excessively nervous. March 5, 1906, pyloroplasty. Adhesions were found about the stomach, but no ulcer or tumor was found. Improvement at once, and six months later she was twenty pounds heavier than previous to the operation.

Case No. 4.—Referred to me by Dr. Jung. M. H. T., white male; aged 48 years; bookkeeper; had suffered with his stomach for fifteen years, and for five years has been unable to retain any solid food. From 120 pounds in weight, he now weighs eighty-three pounds. Pyloroplasty June 21, 1906, marked stenosis and dilatation of the stomach. July 12th, three weeks after the operation, he had gained seventeen pounds, and continued to gain in weight after his discharge, and was well a year later when last heard from.

Case No. 5.—H. R., white male; aged 44 years; merchant; had suffered with his stomach five years, vomiting and burning in the stomach and twenty-five pounds loss in weight. Hyperchlorhydria. Pyloroplasty July 25, 1906. Slight pyloric stenocis and dilatation of the stomach. Improvement was slow, the burning especially persisting, but now he is in good health.

Case No. 6.—P., white female; aged about 25; had suffered a year from obstinate vomiting. September 10, 1906, posterior gastrojejunostomy without a loop; no ulcer or stenosis found. Improvement followed, but a year later she was not entirely well.

Case No. 7.—D. C., white female; aged 18 years; maid; had been troubled with stomach for a year, vomiting occasionally blood. An ovarian cyst had been removed, but she continued to vomit. December 10, 1906, posterior gastrojejunostomy without a loop was done. No ulcers were found, but the mucous membrane of the stomach presented a granular appearance near the pylorus. Improvement was slow, but the vomiting finally ceased. Nineteen months later patient was again operated on for pain at site of the former ovarian cyst. Vomiting had ceased, and she had fattened up considerably. Operation showed numerous adhesions, especially to the stump of the right broad ligament. The pylorus and gastrojejunostomy passage were both quite patulous.

Case No. 8.—Referred to me by Dr. Franz Jung. E. O. P., white male; aged 40 years; dentist; had been troubled with his stomach for ten years—dyspepsia, pain, burning and occasionally vomiting—then tarry stools and later vomiting of blood in large quantities, threatening his life. March 5, 1907, five weeks after a severe spell of hematemesis and three days after the beginning of another, posterior gastrojejunostomy without a loop was done. Scars were seen on the stomach, the pylorus was thickened, nodulated, and a rough ulcerated surface could be felt. The mucous membrane visible; had a granular appearance. A few enlarged glands were seen. Rapid improvement followed, and the patient gained thirty-five pounds by May 1st. At present he is in good health, eats everything, and weighs fifty pounds more than he did when operated on.

Case No. 9.—Referred to me by Dr. Franz Jung. J. M., male, white; aged 62 years; clerk; had been troubled with dyspepsia and vomiting for fifteen years. February 19, 1907, pyloroplasty was done. Marked thickening and stenosis of the pylorus, adhesion of pylorus to liver, dilatation of the stomach. Improvement was steady, and by May 3d he had gained twenty pounds. Now, nineteen months since operation, he is in good health and eats everything.

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Case No. 10.—A. J., female, colored; 44 years old; inmate of Government Hospital for Insane; had been vomiting almost daily for nearly a year. February 5, 1908, posterior gastrojejunostomy without a loop was done. Relief of vomiting followed at once, and continued for a while; but she still vomits at times.

Case No. 11.—Referred to me by Dr. Jung. C. J. H., white male; aged 22 years; merchant; had been troubled with his stomach about one year. Previous to that he had been treated for tuberculosis of the testicles. Vomiting was frequent and loss of weight considerable. June 3, 1908, posterior gastrojejunostomy without a loop. Light adhesions of pylorus and marked stenosis. Improvement at once and slow gain in weight—twenty-five pounds at the end of four months. Vomiting relieved completely, and he eats everything.

SURGERY OF THE BILE TRACT.

By JOHN EGERTON CANNADAY, M. D., Charleston, W. Va.

To operate or not to operate has been the eternal question in the treatment of gall stones. The surgeon has said operate in all cases unless the condition of the patient renders it hazardous. He has said operate early as a prophylactic measure.

A few of the internists and some of the patients say leave the gall stones alone, unless they are kicking up too much of a storm—that is, make use of palliative measures in regard to diet, medicine and hygiene, and so carry around a small-sized package of explosive, liable to go off at any time.

It seems to be almost a popular misconception with physicians that for gall stones ever to exist clinically and surgically there must be the associated symptom group of pain, tenderness, colic, jaundice and clay-colored stools. This fallacious line of reasoning perhaps accounts for the exceedingly late stage at which many of these cases reach the operating table. As a matter of common observation many of these cases seek the surgeon at a time when the patient is intoxicated by infection and retention, and when the coagulation period of the blood renders the operation extra serious in nature because of the hazard of hemorrhage.

The etiology, as we know, is bacteriological in its aspects. Typhoid, colon and the common pus bacili find the gall bladder and associated bile tracts favorite resting points. Medical treatment I consider fallacious in the extreme, because it is a treatment, not of condition, but of symptoms. The patient may be fairly comfortable even though carrying about with him a bunch of gall stones, as it is his personal privilege so to do if he wishes. Personally, perhaps, most of us would hesitate about seeking the relief from a surgeon immediately after or during the first attack, yet we feel entirely different when the appendix is the offender. The difference in sentiment is largely a matter of education, and nothing but time will set us right.

There are many reasons for operating; there are few for waiting. By operating early we protect the patient from a probable desperate hazard taken later in the hope of giving him a mere fighting chance for his life. We protect him from the great disadvantages of work done in the presence of excessive cholemia, inanition, infection, suppuration, toxemia, intercurrent disease, etc. Seventy-five per cent. of all gall stones are formed in the gall bladder. Bile is an excrement; the liver a filter. Bacteria in the bile tract may come from the liver as well as from the duodenum. An inflamed gall bladder is much like an inflamed appendix, and, as a rule, needs removal.

The three most persistent signs of gall stone disease are pain, tenderness and tumor. The pain is most marked over the region of the gall bladder and under the scapula, or it may be referred to the usual location of the ap-

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pendix. Constipation and clay-colored stools may be present; jaundice is seldom seen except in late stages. In examining the gall stone suspect, the most advantageous position is for the patient to be seated undressed to the hips, with the back to the examiner. The patient bends forward hands on knees. The examiner places one hand on each side of the abdomen just below the costal margins. The patient breathes deeply, and at each respiration the hands sink more deeply, the ulnar border turning inward, so that the finger tips are directed upward; when the tender gall bladder comes near the upward pressing finger tips during inspiration, which forces the liver downwards, pain is felt, and the act of breathing is suddenly stopped.

A facet on a gall stone indicates other stones, and is produced by pressure on others when in a plastic state. Most authors look on gall stones as the exciting cause of carcinoma of the bile tract. Gall bladder pathology is best learned at the autopsy *in vivo*, rather than in dead-house studies of the last stages. Infection of the bile tract is, broadly speaking, divided into the calculus and non-calculus forms. The formation of gall stones is the result of a mild infection, with an attenuated culture of slight virulence. We have various forms of inflammation of the gall bladder to deal with—catarrhal, purulent, hemorrhagic, ulcerative and gangrenous. Cases of primary gall bladder disease seldom gives the surgeon trouble, the neglected ones make his path thorny. The intimate association of the gall ducts with the pancreas explain in part the frequent inter-relation of diabetes and gall stone disease. Achilles Rose traces a relation between atonia gastrica and cholelithiasis due to bile stasis, leading to infection and subsequent stone formation. Cholecystitis and cholelithiasis should be no longer considered medical diseases, as the consequences of treating them as such is fraught with too much danger. The absence of gall stones at an operation in chronic cholecystitis does not prove that none have passed or preclude the possibility of their formation.

Kocher finds it difficult to determine previous to operation the seat of the pathological lesion. He has had cholelithiasis recur four times in fifty cholecystostomies, and once in thirty cholecystectomies. Stone in the common duct does not necessarily produce jaundice, which is a symptom in not more than one-third of the cases. A large percentage of cases of supposed indigestion with pain in the epigastric region are due to gall stone disease. Among the infrequent possibilities of gall stone disease are stricture and even atresia of the common duct. Gangrene of the gall bladder is even more rare than gangrene of the appendix, and requires still more prompt action for its relief.

Biliary concretions produce an entirely different set of symptoms, complications and dangers, according to their position in the gall bladder, cystic or common duct; for while gall stones in the gall bladder may produce little or no discomfort in the absence of infection, and may be present for years without being recognized, until the onset of catarrh or some more acute infection, or possibly until the advent of malignant disease, yet, as soon as they leave the gall bladder and enter the cystic duct, the well known seizures of biliary colic occur without jaundice, or with a very slight icteric tinge in the conjunctivæ, due to extension of catarrh along the ducts.

According to the size of the stone in relation to the ducts and the intensity, or otherwise, of the associated catarrh, the symptoms may present every variety, from mere evanescent spasms, usually called indigestion, to violent colic, agonizing in character, and not easily mistaken for any other disease, and in which the pain may be so acute as even to lead to collapse and sudden death.

Obstruction of the cystic duct leads to another set of symptoms, in the shape of retention of inflammatory products, and the development of a tumor due to distension of the gall bladder either with mucus, if the catarrh is only moderate in intensity, or with muco-pus, if the inflammation be more virulent. If the inflammatory process be very acute, phlegmonous cholecystitis, or even gangrene of the gall bladder, may occur; and associated with this acute inflammation a local protective peritonitis nearly always develops, and leads to great augmentation of the original tumor by visceral adhesions.

Perforation of the bile passages, general peritonitis, abscess, septicæmia, pyæmia, and other serious complications may then follow. All these symptoms and many others may occur without any evidence of jaundice, as they

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are quite compatible with a perfectly patent common bile duct, and therefore with an absence of interference with the important excretory functions of the liver.

In rare cases a large gall stone impacted in the cystic duct may, by pressure on the common duct and on the portal vein, cause both jaundice and ascites, and may thus lead to an error in diagnosis. If, in the more chronic cases, at the same time the gall bladder is distended, the combination of symptoms will give rise to a suspicion of malignant disease, or if the gall bladder cannot be felt, and there are rigors and other signs of infective cholangitis, common duct cholelithiasis will be suspected.

As soon, however, as a gall stone enters the common bile duct, an entirely different train of symptoms occurs; and serious as the other conditions I have mentiond may be, yet a greatly enhanced series of dangers arises from an interference, not only with the excretory functions of the liver, but also with the secretory and metabolic functions of the pancreas.

The surgical complications of gall stone diseases are so many and of such importance that I append a list:

1. Ileus due to paresis of the bowel, leading to enormous distension of the abdomen and to the symptoms and appearances of acute intestinal obstruction, apparently the consequence of the violent pain.
2. Acute intestinal obstruction dependent on—
(a) Paralysis of gut due to local peritonitis in the neighborhood of the gall bladder.
(b) Volvulus of small intestine.
(c) Stricture of intestine by adventitious bands, originally produced as a result of gall stones.
(d) Impaction of a large stone in some part of the intestine after ulcerating its way from the bile channels into the bowel.
3. General hemorrhages, the result of long continued jaundice, dependent either on gall stones alone or on cholelithiasis associated with disease or with interstitial pancreatitis.
4. Localized peritonitis, producing adhesions which may then become a source of pain, even after the gall stones have been got rid of. I believe that nearly every serious attack of biliary colic is accompanied by adhesive peritonitis, as experience shows that adhesions are found practically in all cases where there have been characteristic seizures.
5. Dilatation of the stomach dependent on adhesions around the pylorus.
6. Ulceration of the bile passages, establishing a fistula between them and the intestine.
7. Stricture of the cystic or common duct.
8. Abscess of the liver.
9. Localized peritoneal abscess.
10. Abscess in the abdominal wall.
11. Fistula at the umbilicus, or elsewhere on the surface of the abdomen, discharging mucus, muco-pus or bile.
12. Empyema of the gall bladder.
13. Infective and suppurative cholangitis.
14. Septicæmia or pyæmia.
15. Phlegmonous cholecystitis.
16. Gangrene of the gall bladder.
17. Perforative peritonitis due to ulceration through or to rupture of the gall bladder or ducts leading to extravasation of infected bile into the general peritoneal cavity.
18. Pyelitis on the right side due to a gall stone ulcerating or an abscess of the gall bladder bursting into the pelvis of the kidney.
19. Cancer of the gall bladder or ducts.
20. Subphrenic abscess.
21. Pleurisy or empyæmia of the gall bladder.
22. Pneumonia of the lower lobe of the right lung.
23. Chronic invalidism and inability to perform any of the ordinary business or social duties of life.
24. Gangrenous or suppurative pancreatitis.
25. Chronic interstitial pancreatitis.

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26. Infective endocarditis.
27. Cirrhosis of liver.
28. Appendicitis due to extension of inflammation from gall bladder or to the impaction of gall stone in the appendix.

Our text-books up to within a very short time have been misleading, not only in the interpretation of symptoms, but in recommending the proper management of these cases when diagnosed. It was generally advised that an operation on the ducts or gall bladder be not performed, unless jaundice was severe and persistent colic lasting and of frequent occurrence, or when there was evidence of pus in the gall bladder—all of which are very late manifestations of biliary tract disease. Gall stones themselves, since they cannot form in a few days, are late manifestations of pre-existing disease.

As soon as gall stones give trouble their removal by operation is the most rational method of treatment, since it is only from the complications, which usually rise sooner or later, that danger from operation need be apprehended. When gall stones have once formed no medical treatment known to us can remove them, though medical measures often can do much for the relief of catarrhal conditions of the gall bladder. By all means, after medical measures have had fair trial, surgical relief should be attempted.

No surgeon should attempt the removal of gall stones unless he is prepared for any of the various operations on the biliary passages, as it is impossible to say beforehand what may be required. The frequency of gall stone disease is shown by the fact that 10% of autopsies bring stones to light; the symptoms of this trouble are all too often attributed to something else. In cases where a positive diagnosis cannot be made, exploratory incision should be unhesitatingly recommended, as in good hands it is practically free from danger, and is pregnant with possibilities for good.

Operative treatment is indicated, generally speaking, in all cases of gall bladder disease, unless, of course, there are special risks to be run by waiting. I would as earnestly and conscientiously advise operation in gall bladder disease as I would advise the removal of the diseased appendix. When a patient presents himself with a history of indigestion, occasional attacks of pain or tenderness, or both, over the region of the gall tract, and maybe at time jaundice, colic or other of the severer symptoms commonly looked for, a surgeon should be consulted. We most carefully investigate and scrutinize with a view to operation when the slightest sign of appendicitis turns up. Indeed, most patients affected with this disease are quite equal to the occasion, and make their own diagnosis at an early date. Why should we have so many scruples and so much dilly-dallying over a case of gall tract disease? From the nature of things, case for case, the mortality in bile tract surgery has been fairly high. There are several reasons for this. The work presents technical difficulties that may only be overcome by the proper exercise of surgical ability and skill, which has been well trained in the particular technique of the operation required.

Indications for gall stone operations are: "1. Presence of any symptoms seriously interfering with patient's mode of life. 2. All cases in which medical treatment has failed. 3. Acute suppurative cholecystitis or cholangitis. 4. Acute suppurative chronic obstruction of the cystic duct. 5. Persistence of acute obstruction of the common duct. 6. All cases of calculus, save possibly acute obstruction of the common duct. 7. Perforation, and 8. Cases in which there is a suspicion of primary carcinoma of gall bladder."

Operation is contraindicated in: "1. Acute obstruction of the common or hepatic ducts, in the belief the stone may pass through the common duct into the duodenum and no others are present to produce a new attack. If fever, however, is associated indicating suppurative cholangitis, operation should be performed with drainage of the hepatic duct. 2. Very old or stout individuals, or those suffering from diabetes, arteriosclerosis, cardiac, pulmonary or renal disease. 3. Extensive carcinoma of the biliary passages."

The precise nature of the operation will remain in the balance frequently, until after the exploratory incision has been made, and the exact condition of the gall bladder and biliary passages determined. Dependent upon conditions found in the gall bladder the operation will be cholecystotomy, cholecystostomy, cholecystendosis, or cholecystestomy. If the calculus is implanted

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in the cystic duct, cysticotomy. If in the hepatic duct, hepaticostomy, hepaticotomy, or hepaticolithotripsy. If in the common duct, choledochotomy, choledchostomy, cholecystenterostomy, cholehenterostomy, choledchectomy, or hepaticoduodenostomy.

Preliminary to any attempt at exposure of liver or bile ducts, that part of the anatomy must be supported and brought prominently forward by a sandbag placed under the back a little above the lower level of the liver. If, in addition to this, a slight reversed Trendelenberg position is adopted, the feet being about eight inches lower than the head, the intestines will fall away from the incision exposure and increase the access.

The incision that gives the freest access is that of Mayo-Robson. The first vertical is made through the right rectus through its outer border, and is about five inches in length—the upper end beginning at the costal margin. When more room is needed the vertical cut may be lengthened downwards, or its upper extremity may be carried upward and inward, dividing a portion of the recti fibres not far from their insertion into the costal margin. In perhaps a greater portion of cases, if the anterior and posterior muscle sheaths are incised the muscle itself can be retracted well toward the ensiform appendix and sufficient room be given. It is never advisable to make the peritoneal incision to the margin of the wound, since that membrane stretches readily. In thick abdominal walls there will be an advantage in making the skin and fat incision two inches longer than the fascial cut. Large gauze sponge with safety tapes attached should be systematically and judiciously placed so as to hold the intestines out of the way and at the same time be a preventive of possible contamination from the opened bile tract. In packing, it is well to place gauze on the left hand side of the gall bladder, then below and finally on the right side. Kehr and Courvoisier make incisions of phenomenal length, but they are rarely really necessary, and often a disadvantage, for the reason that they will allow the intestines to prolapse through the wound. Next, the pathology is located, if possible, and liver and gall bladder adhesions, if so placed as to interfere with the work at hand, are broken up. Much care must be taken for the prevention of bleeding and of tearing any of the hollow viscera. The bile tract can then be thoroughly inspected by sight and palpation. The gall bladder and liver together are seized in the gauze-covered gloved hand and gently drawn downward and from under the shelter of the ribs; when this first step can be effected it will be an easy matter to rotate the liver so that its under surface presents upwards and forwards. The cystic and common ducts are brought into almost a straight line and almost on a level with the skin, in most subjects. In those having very thick abdominal walls the exposure cannot be so favorable. In some thin women particularly, the common duct can be brought outside the wound. If stones are present in the gall bladder they are dealt with by cholecystotomy or cholecystectomy. The former will always be the desirable operation in a considerable number of cases, for the reason that it can in appropriate cases give the most speedy relief. It will be at times useful as a palliative and temporizing measure, preliminary to more radical procedure when the strength of the patient justifies it. To attempt a complete operation in some cases that are very feeble means almost certain death.

This operation was first performed by Dr. Marion Sims about thirty years ago. That was the first step in a revolution soon to be brought about. Thence forward gall stone disease was the property of the surgeon.

The fundus of the gall bladder is drawn up as far as possible without undue traction and well packed around with gauze sponges; with a good-sized aspirator the contents are emptied; while this is going on the bladder is seized on either side the needle with a pair of hemostats. The fundus is opened with the scissors to the extent of about three-fourths of an inch. The stones can then be easily removed with a gall stone scoop. The ducts are again inspected with the fingers, and if there are stones in the cystic or hepatic ducts, it may be possible to dislodge and milk them into the gall bladder. A drainage tube, usually about one-third of an inch in diameter, is inserted well into the gall bladder, going almost down to the cystic duct opening. The tube is fixed by a plain catgut stitch, which passes through all the coats of the gall bladder, except the mucosa. The tube is further se-

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cured by a purse-string suture, which is tightened while the tube is being invaginated into the bladder, or it may be covered over by the usual gastrostomy stitch. If the tube is fastened in in this manner there will be no leakage. The gall bladder is dropped back in the abdomen, and the tube brought out through a separate stab incision, and the operation wound entirely closed. Formerly it was the fashion with many to fasten the gall bladder to the parietal peritoneum by a few sutures, but this is unnecessary, since omental adhesions form around the tube in a few hours and make the drainage strictly extra-peritoneal.

Stones in the cystic duct may be loosely floating or impacted. Needling or crushing are rather unsurgical, and seldom resorted to to-day. Removal of the cystic duct along with the gall bladder or opening the systic duct—cysticotomy—are preferable. After the latter operation it may be necessary to use a drainage tube. If the duct is sutured, fine catgut should be used, and the mucosa should not be penetrated.

The operation of cholecystectomy, while giving surgically more ideal results, does at times add perceptibly to the risk of operation.

The indications for this operation are:

1. Injuries of the gall bladder, rupture, stab or bullet wounds.
2. Gangrene of the gall bladder.
3. Phlegmonous cholecystitis.
4. Membranous cholecystitis.
5. Chronic cholecystitis, with dense thickening of the walls of the gall bladder and cystic duct, or without stenosis of the cystic duct, and in chronic cholecystitis, when the gall bladder is shrivelled and puckered and universally adherent. In such cases it is no longer a receptacle for the bile.
6. Distension of the gall bladder, hydrops or empyæma, due to blockage of the cystic duct by calculus, stricture, growth, or external inflammatory deposits; or in cases of mucous fistula following operation for these conditions.
7. Cases of fistula between the gall bladder or the cystic duct, on the one hand, and the stomach, duodenum, or colon, on the other.
8. Multiple ulcerations of the gall bladder or the cystic duct, when the gall stones have eroded their way through the walls into the liver, the duodenum, or other protective adherent masses.
9. Primary carcinoma of the gall bladder.

About this operation there are many differences of opinion, and a few would restrict it to cases of irremediable obstruction of the cystic duct. This operation has one disadvantage that at times is of serious import. It will make a second operation more difficult and dangerous. For stones may at times form in the hepatic and common ducts, but this possibility is rather remote.

Cholecystectomy as an operation has developed since the eighties. One may begin at the base of the gall bladder or begin at the cystic duct, the latter by preference. The cystic duct and artery are ligated separately; with the gauze-covered finger the gall bladder is separated from its fossa. It is next removed by the division of its peritoneal folds about half an inch from the liver, so as to leave sufficient covering for all the raw surface. Before suturing, this oozing is stopped by the hot compress, or in rare cases it may be necessary to pass a suture of catgut through the liver tissue and tie gently. The blunt pointed needles of Kousnietzoff are useful here. Ten-day chromicized catgut for the duct ligature and plain gut for the peritoneal sutures will generally suffice. Drainage will seldom be necessary, though a number of operators drain all liver cases even when closing all other clean sections, which looks like an idiosyncrasy.

Gall stones in the hepatic duct may usually be removed through the common duct. If located much above the bifurcation in the liver substance, they probably cannot be removed. If a stone be removed from this duct by incision, the wound should be carefully sutured and drainage provided for in case of a leak. It occasionally happens that the hepatic or common duct may become enormously dilated through obstruction, and contain large quantities of bile or mucus.

The common duct may be obstructed by stone at any point—in fact, I have seen both it and the hepatic duct impacted from end to end with gall

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stones. Common duct stones may be approached from above the duodenum and through the duodenum. It is practically always advisable to drain the common duct after opening it to remove gall stones. The duct is usually large enough for exploration with the finger, and small forceps or a gall stone scoop can be easily passed. Care must be taken to prevent soiling of the operation field, and the drainage tube must be carefully sutured in place. When a stone is impacted in the ampulla of latter, or anywhere in the third portion of the duct, the transduodenal route will be nearly always necessary. The operation of cholecystenterostomy will be seldom necessary, as the common duct can be anastomosed with itself or the duodenum without any great difficulty.

SOME REMARKS ON MECHANICAL (DYNAMIC) OBSTRUCTION OF THE BOWEL.

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It is not the purpose of this paper even to touch upon all of the various phases of intestinal obstruction, but merely to call attention to a few features of this interesting affection.

The first is the abuse of purgatives in this condition. Every surgeon has seen deaths caused by the injudicious use of purgatives, and there are few things that require more judgment or skill than the correct exhibition of a suitable purgative at the proper time. Certainly, in acute infectious diseases, or in any case where a toxemia may develop, a purgative is not only advisable, but absolutely necessary. It is diffierent, however, with acute obstruction from any other cause than that which has just been mentioned. A sudden obstruction, not due to nervous affections, always means one of two things—either an inflammatory condition of the peritoneum or else some form of mechanical obstruction, as bands, strangulated hernia, intussusception, volvulus, stricture or tumor.

When an inflammatory condition is present purgatives are contraindicated. The great principle of rest is applicable in every form of therapeutics, whether medical or surgical, and an inflammation of the outer coat of the intestines is no exception to the rule. This principle is recognized so universally in other instances that it should be superfluous to call attention to it here. A fissure of the anus is best cured by temporarily paralyzing the sphincter, so giving the fissure rest, when it will promptly heal. The object of using splints for broken bones and retentive apparatus in injury of any portion of the body is solely to secure rest for the injuerd part. In order to give rest we must first find the function of the organ involved, and attempt to suspend this function, either completely or partially. Affections of the eye, for instance, would not be benefited by rest in bed, unless light was cut off and the patient prevented from seeing, nor would a darkened room help the patient with a broken leg unless the bones were properly set and retained in a position of rest. One of the chief functions of the intestines is to propel the food it contains, and this is accomplished by peristalsis. In the inflamed bowel we should apply the principle of rest by restricting this function as much as possible; so we should attempt to inhibit peristalsis rather than accelerate it. If we give purgatives in such conditions, whether the inflammation is due to appendicitis or to whatever cause, we not only tend to spread the infection, but we fly in the face of the practice we follow when other organs are affected, and instead of lessening

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the function of the bowel and so giving rest and an opportunity to recuperate, we make matters worse by increasing peristalsis with the purgative.

There are some instances in which a purgative does an apparent amount of good in inflamed conditions of the peritoneum, because the toxemia from the infection is so great that the purgative causes elimination of the toxins and benefits the patient in a constitutional way, while really making the local condition worse. If such patients were given an abundance of water, and if enemata were used, which empty the lower bowel with a minimum amount of peristalsis, a sufficiently beneficial effect could be obtained in an eliminative way with but a small increase of peristalsis, while at the same time more work would be thrown on those other great eliminative organs, the kidneys, by means of a copious supply of water. In this way the function of the bowel as an eliminative organ would be partially suspended, and the rest necessary to repair would be obtained.

Where the acute obstruction is due to some mechanical cause the contraindication for a purgative is even plainer. All purgatives act either by promoting peristalsis in some way or by stimulating the secretion of the intestines. As a matter of fact, while some purgatives act more decidedly in one of these two manners, they all tend to increase peristalsis, either directly or indirectly. The more vigorous the purgative in mechanical obstruction the more absolute the obstruction will be. Just as pulling tighter on a string increases the security of the knot, so purgatives by stimulating peristalsis will make the obstruction from any mechanical cause more complete, whether it be due to volvulus, bands or stricture. Besides this deleterious effect, the increased secretion within the bowel, caused by the purgative, augments the normal contents of the alimentary canal and causes greater distension, which rapidly adds to the seriousness of the condition. Food in the stomach aggravates the obstruction by giving the bowel more work, thereby stimulating it to greater activity.

The other point to be considered is the surgical method of dealing with the obstruction. The earlier surgical interference is recommended, after reasonable efforts have been made with enemata, to produce an evacuation, the better for the patient, as the mortality rate increases with each hour's delay. When distension, after an obstruction, is very marked, frequently an enterostomy is indicated for drainage to carry off the dangerous toxins that have formed. Whether this should be done depends on the findings during the operation, and must necessarily be left to the judgment of the surgeon. When resection is attempted the method by which the bowel is united is of great importance. A fixed metallic body, with a small lumen for drainage, such as the Murphy button, which by its weight may cause a kinking or volvulus of the portion of intestines in which it has been inserted, is hardly the logical thing to use in such conditions. Intestinal sutures, carefully placed by one who has acquired skill in this line either by clinical or by experimental experience, are much safer, and can be inserted in but little longer time than that taken for placing the Murphy button. Of course, when the bowel cannot be delivered into the wound and sutures cannot be accurately placed, the Murphy button may be indicated; but, judging from my experience, such conditions are quite uncommon.

Since the opening of Memorial Hospital, July 27, 1903, about five years ago, I have done eleven resections of the bowel. These cases will be reported more fully in a subsequent paper, but I will here give a brief summary of them. Of the eleven cases two were of such a nature that union could not be later accomplished. In one instance resection of a large, malignant tumor of the cecum was done, and an artificial anus was made. The patient left the hospital, but soon developed metastasis in the liver, from which he eventually died. There was no time at which a subsequent operation would have been justifiable. In the other case, which is reported below, the involvement of the rectum by gangrene made union here impossible, so a permanent artificial anus was established. Of the other nine cases in one resection involved the upper rectum, was deep in the pelvis, and on account of the adhesions and the raw surface left after removing very adherent pus tubes, suturing was apparently contraindicated and a Murphy button was used. The case made a satisfactory recovery. Another patient was a feeble man whose intestine was gangrenous

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from a strangulated hernia. In order to make assurance doubly sure a Murphy button was used and sutures inserted over this. This was one of my early cases, and I believe I made a mistake in using the button, as events subsequently proved, for the patent developed a large fecal fistula, evidently due to the presence of the button. Tne fistula closed rather suddenly two months later. Seven cases were united solely by suturing. Of these six recovered uneventfully. One patient died the third day after the operation. He had a strangulated hernia and two different loops of intestine were involved, which made a double resection necessary. The patient was a chronic alcoholic, and considerable chloroform had been administered to him for sometime before he came under my care in order to reduce the hernia. A post-mortem was held by Dr. E. G. Williams, pathologist to the hospital, and showed a hobnailed liver and other evidences of chronic alcoholism. Both unions were intact, and there was no sign of leakage from either of them, nor any indication of peritoneal inflammation. The small bowel contained a few ounces of blood, but hardly enough to affect materially the fatal issue, which was, in all probability, due to the suspension of the functions of the liver and kidneys following the large amount of anæsthetic necessary in a man who had been a heavy drinker for many years. Certainly this death cannot be attributed to any technical defect in the operation. In none of the cases in which suturing alone was used was there a fecal fistula or subsequent trouble in any way attributable to the resection. The clean and uneventful recovery of these cases, so far as the resection is concerned, contrasts strongly with the stormy convalescence sometimes seen after a Murphy button has been used, when the formation of fecal fistula and anxiety about the passage of the button, which may require a subsequent operation for its removal, often afford an occasion for considerable apprehension.

The two cases reported below occurred within three weeks of each other, and are selected to illustrate two types of mechanical obstruction in adults.

Case 1.—Intestinal obstruction from a band. Enterostomy, followed by resection of the bowel and union by suturing.

D. T., female; aged 21; colored servant. Admitted to Memorial Hospital August 2, 1908. Discharged September 9, 1908. Referred by Dr. Angus Nichols, of Richmond, Va.

Family history and personal history are of no significance.

Present Illness.—Three months ago she complained of severe pain in right side of the abdomen, which was accompanied by vomiting. Three days after this the patient was operated on in Norfolk, but it is impossible to learn the nature of the operation, except that drainage was used. She left the hospital after one month, and was apparently well until Friday, July 31st, when she suffered severe pain in her abdomen, particularly in the right side, with diffuse tenderness and persistent vomiting. On the following Sunday she was referred to me and admitted to Memorial Hospital. After washing out her stomach and discontinuing everything by mouth, she seemed much better. Soapsud enemata were ordered and a small bowel movement obtained. On the next day, August 3d, the patient was considerably worse, with a pulse of 120 and abdomen much distended. An operation was decided upon at once. Under ether anæsthesia an incision just to the right of the old median scar was made. A considerable quantity of blood-stained serum was found in the peritoneal cavity. The small intestine was distended and congested. At a point about eight inches from the cecum a firm band crossed the ilium and completely occluded its lumen. The band ran from the right iliac fossa to the root of the mesentery. The intestine below this point was collapsed. The band was divided, and the bowel underneath it was found to be partly gangrenous; the mesentery for several inches above this point was infiltrated and thrombotic. The patient's condition was becoming rapidly worse, her pulse being 180, and very weak. On this account and because drainage of the distended bowel seemed indicated, an enterostomy was done. The affected loop of intestine was drawn into the wound, sutured to the skin, and surrounded by iodoform gauze. It was then incised, and a large rubber tube inserted in the proximal end. She left the table with a weak pulse of 190. She was put in the Fowler position, with continuous rectal saline infusion and hypodermoclysis of saline solution. This is, practically, the treatment recommended by Murphy,

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and has proved most efficient, not only in curing peritonitis, but in preventing it. Under this treatment she rapidly improved, and on the following day, August 4th, her pulse was 110 and of good volume, and there was a profuse discharge of fecal matter through the enterostomy. Her improvement was continuous, and on August 15th, twelve days after the enterostomy, she was operated upon with a view to re-establishing the continuity of the intestine. For several days before this second operation she was given sterile food, and careful mouth toilet was done every few hours.

Operation August 15, 1908, under ether. An elliptical incision was made, including the enterostomy, the old scar, and the adjacent skin. The bowel opening had been covered with moist gauze to prevent infection from this source. On entering the peritoneal cavity very dense adhesions were found around the intestines. They were separated, and two clamps were placed on the intestines, one above and another below the enterostomy. All of the bowel between these points, including the enterostomy opening and its adjacent skin, was excised in one mass, the surrounding intestines and peritoneal cavity having been carefully protected with moist gauze. The ends of the bowel were then united by a continuous right-angle suture of linen penetrating all coats. A few reinforcing sutures were placed at the mesenteric border, as the infiltrated mesentery made approximation at this point more difficult than usual. A tear was discovered several inches above the line of union, and probably occurred during separation of adhesion, when the abdomen was first opened. This was closed by a right-angle continuous suture, reinforced by mattress sutures to relieve tension. The appendix was congested and very much enlarged. It was removed, being tied off at its base by a kangaroo tendon, which included both the mesentery and the appendix. The stump was disinfected with pure carbolic. The patient's condition had become gradually worse until it was quite desperate. Her pulse was 190 and respirations exceedingly bad, necessitating the use of oxygen and at one time artificial respiration. The abdominal incision was rapidly closed with through and through silkworm gut suture, and a large drainage tube was left in the lower angle of the wound. The patient was put to bed with continuous rectal saline and hypodermoclysis of saline solution, and as soon as she had reacted sufficiently was placed in the Fowler position. Under this treatment her pulse gradually came down until by the next day it was less than 120. She made an uninterrupted recovery from this time on, except that she suffered a great deal of pain for the first ten days after the operation. This was to be expected from the large amount of raw surface necessarily left after this operation. At the end of two weeks the pain had practically disappeared. On September 9th she was discharged from the hospital, after being up for several days previously. There was a small raw surface about an inch in diameter at the lower corner of the wound, where the drainage tube had been inserted. There was practically no discharge from this, as there had been but little from the tube at any time. The patient was comfortable and feeling well, and her bowels were moving regularly.

Case 2.—Volvulus of the sigmoid; gangrene of the sigmoid, rectum and descending colon. Resection of the gangrenous bowel and colostomy. S. F., male; aged about 40 years; colored. Admitted to Memorial Hospital, August 17, 1908; discharged September 11th. Patient was a deaf mute, and it was impossible to secure a satisfactory history, but he had evidently suffered from this condition for several days, and had not been relieved by purgatives.

The abdomen was enormously distended, and coils of intestine could be distinctly outlined. Patient's pulse was about 140 to 150, and his condition was so desperate that an operation under general anæsthesia could not be considered. Consequently, cocaine was used. I thought the obstruction was in the sigmoid and probably due to cancer; so an incision was made over the cecum, with the idea of making an artificial anus and doing a radical operation for cancer of the sigmoid later on; an artificial anus in the region of the sigmoid would have made a subsequent radical operation in this region much more difficult. After opening the peritoneum a considerable amount of brownish fluid was evacuated. Toward the median line a large cystic mass was felt. Another incision was made in the median line, and disclosed an enormously dilated, slate-colored sigmoid, which was at first difficult to identify. The gas it contained was evacuated by a trocar and canula, and the intestine drawn

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into the wound. It was found to be a volvulus of the sigmoid, which had turned through nearly 180 degrees. The whole of the sigmoid, the upper part of the rectum and the descending colon were gangrenous. Along the mesenteric border of the affected intestine were numerous black thrombotic areas. Healthy bowel was found about the splenic flexure of the colon, which was pulled down, and the intestine divided at this point. The proximal end was temporarily clamped, and all of the gangrenous intestine excised, after ligating the mesentery in sections down to the rectum. As the rectum was gangrenous, as far as it could be inspected, and as it was not thought proper to leave the rectal stump free in the pelvis, the gut was amputated through the affected area and this lower portion, which consisted of the upper part of the gangrenous rectum, was sewed in the lower angle of the wound. A tube was inserted in this, and was packed around with iodoform gauze. The rest of the wound was approximated with sutures, except at the upper angle, where the clamped end of the colon was brought down and sewed to the skin. A purse-string suture was then inesrted in the end of this bowel, and the clamp removed, and a large rubber tube placed in the bowel, which was closed snugly around the tube with the purse-string suture. A large drainage tube was put in the primary opening over the cecum to drain the peritoneal cavity, and a liberal amount of gauze surrounded the openings of the intestines in the median line to prevent infection of the wound. Patient stood the operation very well. He was put to bed, and the head of the bed elevated about two feet. He was given salt solution by hypodermoclysis. There was an abundant fecal discharge within a few hours. By the next day the patient had improved markedly, and on September 19th, two days after the operation, his pulse was only 100 and of good volume, with a temperature of 100. He made an uninterrupted recovery from this time on. The part of the rectum that was sutured in the wound gradually sloughed away. The patient was up and walking about three weeks after the operation, and was discharged in good condition on September 11, 1908, twenty-five days after admission to the hospital.

On account of the affection of the rectum and the amount of sigmoid and colon removed, it will be impossible to restore the continuity of the intestine, and the artificial anus will be permanent.

SOME FURTHER APPLICATIONS OF THE FOWLER-MURPHY METHOD.

By SOUTHGATE LEIGH, M. D., Norfolk, Va.

Surgeon Sarah Leigh Hospital, Norfolk, Va.

At the last meeting of this Society, one year ago, I read a brief paper on the modern treatment of diffuse suppurative peritonitis, and gave in detail a short description of the Fowler-Murphy method of position and salt solution by the bowel. My experience during the past year confirms and strengthens the claims which I then made for the wonderful efficiency of the treatment.

I would like to lay more stress on the combined elevated and side position in appendicitis cases, which position I then advocated, but referred to only briefly. I make use of it with good effect at every opportunity, and believe it to be a marked improvement over the method of elevation in the dorsal position.

So far, in those cases starting from appendicitis, in which the general peritoneal cavity has become infected, I have found it unnecessary to make more than one incision, over the site of the appendix. Through this opening large, soft rubber tubes are inserted, one passing upwards under the liver,

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another downward to the pelvis, and a third backwards, and sometimes a fourth towards the middle line. Each tube has several perforations on the sides. In addition I frequently put in a gauze packing to fill any old suppurating cavity which may be found around the appendix site. Small gauze wicks are inserted into the tubes. The wound is closed firmly, and superficially packed to prevent protrusion of the intestines. As soon as the patient has safely recovered from the anæsthetic the head is sufficently elevated to make all fluids in the abdominal cavity gravitate towards the pelvis, and the patient is *turned on the right side*, so as to make the outer openings of the tubes low enough to drain both the pelvic and abdominal cavities. To my mind, *this right side position* is almost as important as the elevation. Without it drainage from the pelvis must be uphill, and it must be more difficult to prevent a spread of the infection throughout the whole of the pelvis. We know that the pelvic peritoneum does not absorb so readily as the abdominal, and yet the more the pus collects there, the stronger are the adhesions which are left and the more danger there must be of the formation of other pockets of pus.

I have yet to see a single case in which the side position did not materially aid in the drainage. A board put across the foot of the bed for the feet to rest against will assist in keeping the patient in position. The patient's skin has to be fortified against pressure effects by alcohol, zinc oxide and other hardening remedies.

As its name implies, this paper is intended especially to refer to other conditions beside appendicitis, in which it is proper to use the position treatment, and also, if need be, the salt solution by the bowel. As a preventive means, elevation of the head of the bed has been used by the writer in many different kinds of cases.

In operative work about the abdomen or pelvis, where there is the slightest danger of sepsis, elevation of the head of the bed will make one feel much safer. Formerly I hesitated to currette the uterus where there was much endometritis, if a laparotomy was to be done at the same sitting, fearing that some sepsis might pass from the interior of the uterus to wounds which might be made from above. Now I feel safe to do the double operation in almost any case, because I know that if any infection does exist it will be kept low down in the pelvis, where it can do but little harm.

In stomach or intestinal work, where we can never feel absolutely safe about slight infection from the mucous surfaces, elevation is a safeguard. In bad cases I make a counter opening below, insert tube drainage, and use the continuous saline by the bowel.

In all peritonitis cases elevation is a help and a safeguard.

In puerperal infection it is of special importance, and does great good. The uterine cavity drains better, and septic fluids in the pelvis are kept from spreading. The usual treatment by intra-uterine douches, ice bags and free moving of the bowels is greatly aided by the elevation of the head of the bed. Where pus forms and drainage is resorted to, the method is even more helpful, and the salt solution by the bowel will augment the good effects.

To my mind this new method of treatment should be especially helpful to the country practitioner, who is so often handicapped by difficulties and disadvantages which his city colleagues can hardly appreciate. In the question of appendicitis alone a great burden is removed from his shoulders. We must all admit nowadays that if a patient has a well-defined attack of appendicitis the proper treatment is operation without delay, *provided the operation can be done with skill and with the best facilities.* It is not always possible, however, to rush the patient off to a hospital on the first appearance of trouble. And yet if there is any delay the physician must feel much anxiety, fearing that infection may spread more or less extensively and jeopardize the patient's life. In these cases of doubt and necessary delay the patient should be elevated and put on the right side, and kept there continuously until the attack clears up or until taken to the hospital. In this position sepsis, if it exists, is localized, kept more or less from spreading, and if the patient comes to the operating table the treatment is much simplified and much less dangerous.

Such a case should be given nothing by mouth; the bowels should be emptied, and if the case is at all severe, continuous salt solution given by the

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rectum. Simple nourishment, such as the predigested liquid foods, may be used with the saline.

After abdominal operations, and in all cases of inflammatory conditions of the abdomen or pelvis, the elevated position is most comfortable to the patient. This is especially true where there is tympanites. My experience is that it rarely effects the heart's action badly. I have seen two or three instances where the patients were quite weak from other causes, and I felt it safer to temporarily lower the bed.

In the transportation of appendicitis and similar cases, where position is a safeguard, I must again lay stress upon the necessity of propping the patients up, in appendicitis keeping them also on the right side. The jolting of wagons, trains and ambulances may greatly increase the gravity of the cases unless this precaution be taken. The specially constructed stretcher with elevating attachment, mentioned by me in the former paper, has been in constant use, and with good results.

In using the continuous salt solution by the bowel I still employ a glass infusion bottle, raising it only high enough to produce the necessary flow. The solution is kept warm by hot water bags. The tube is compressed so as to make the fluid run by drops, at least a drop a second. A medium size soft catheter carries it into the bowel. In ordinary cases I stop the flow for one hour out of every four. If the case has been drained by tubes or gauze the salt solution may be used as freely as the bowel will absorb it. If, however, there is no drainage I doubt the advisability of the free use of the solution. In drainage cases we note that the drainage from the tubes is at times very free, and almost colorless, showing that much salt solution is absorbed by the blood vessels, and that it is freely thrown off by the serous membrane. In closed operative cases or in nonoperative cases, where the treatment is used, I believe it is safer to use the salt soluton only in reduced amounts. Otherwise there is some danger of the fluid accumulating in the peritoneal cavity.

It is hardly necessary to go more into detail in the discussion of this most interesting subject. Many of you have used the treatment, and know as much about it as the writer; some of you doubtless know more. To those who have not employed it I would commend the method most strongly. When once started with it you will do as I have done, and extend its usefulness to embrace more and more of your cases. So far the method has been almost entirely in the hands of the surgeon in hospital practice. It should be used largely by the general practitioner, both to prevent complications and to lessen the severity of impending inflammatory and suppurative conditions.

For the "elevation" part of the treatment no apparatus is needed—the head of the bed being raised by a chair or table, and, when indicated, the patient kept on the right side by pillows. In the hospital, where the treatment is so constantly being used, the rack described in my former paper is a convenience.

Where it is desirable to use also the "rectal infusion," all that is required is a fountain syringe, soft catheter or rectal tube and hot water bags or bottles. The graduated infusion bottle is a convenience, simply because with it the nurse has less trouble in watching the rapidity with which the fluid is running. The salt solution is used in a strength of a teaspoonful and a half to the quart of warm water.

Our profession during the past few years has been reaching out more and more for good old common sense methods of treatment. None appeals to me more strongly than the Fowler-Murphy treatment, and none deserves to be more generally adopted.

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THE ECONOMICS OF APPENDICITIS.

By W. LOWNDES PEPLE, M. D., Richmond, Va.,

Surgeon Assistant St. Luke's Hospital.

What is to be said of appendicitis is equally true of many other acute intra-abdominal troubles which fall suddenly and take life quickly. But from the greater frequency and the more widespread knowledge of appendicitis, I have chosen to confine my remarks to it alone.

Appendicitis, or, better, its recognition, has become so common that, like typhoid, it is now a dreaded possibility in every famly, a matter of calculation with every thoughtful man who runs close to the salary limit. What would I do if I should have appendicitis? How much would it cost me in time from business and in actual outlay of money? These are questions which men are asking, and we should be ready with an answer.

To save life is not the only question in the treatment of appendicitis; a tedious convalescence followed by a large ventral hernia usually means bankruptcy to a laborer. To get the patient out of bed on his feet with an abdominal wall that will stand the strain of work, in the shortest possible time, is a question, with many men, second only to life itself.

If every case of appendicitis could be operated upon within the first six or eight hours from its inception, the cost in life and time and money could be foretold with far greater accuracy than in cases of child-birth. But the problem is a most complex one, blocked by a hundred varying lesser problems from human obstinacy and the closure of telegraph stations, all down the line through long distance 'phones, railway schedules and the condition of our country roads. Who has not seen the inadequacy of long distance 'phones throw well-laid plans into hopeless confusion, or the closure of the small telegraph station at night play havoc with a rapidly advancing case? The relation of good roads to emergency surgery would make a splendid paper of itself, and should prove a cogent argument in attaining better thoroughfares. I shall never forget the look of one poor fellow with rapidly advancing peritonitis, as he gave me the signal of distress of some fraternal order. I wish the State Legislature could have seen that signal, it was really made to them. Twenty miles of road cut up by sawmill wagons and frozen as hard and sharp as slag lay between him and the railroad. Had there been a road over which a sick man could travel he would have reached the hospital at least eighteen hours earlier than I got to him. To operate upon every case of appendicitis within a few hours of its inception is ideal, Utopian. It cannot be done. Many cases are far advanced before the physician sees them, and many hours necessarily elapse before they can be taken to a hospital or a surgeon brought to them.

The urgent request for an immediate operation upon a patient but slightly ill is like a bomb-shell in a community where the insidiousness of this disease is not understood. Many individuals have to be convinced by a series of progressively sharper attacks. Others must feel the presence of death itself before consenting to an operation. Death from peritonitis from a case not operated on is the one thing alone for many others who hold tenaciously to the belief that one cannot die from appendicitis except under the auspices of a surgeon. One such death may mean the saving of twenty lives in that vicinity in the five years that follow it.

The question of early operation cannot be settled by decree nor imperial ukase; it is one for time and education. In the meanwhile, we must treat the cases as we find them, and do our best among the conditions which surround us.

To repeat, second only to life itself is the big economic question of cost in time and money to the patient. It is this phase of the problem—getting the patient out of his bed, back to his work and fit for his work in the shortest time and with the least expense—to which I wish to direct attention.

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This discussion does not apply so forcibly to the very rich, who can afford to lie a-bed indefinitely and take their convalescence at their ease, but rather to the big body of plain people who work with their hands and hate debt.

While my own series of cases (fifty-three in number) is very small in my work at St. Luke's and the Virginia Hospital, I have assisted Dr. Stuart McGuire in fully a thousand more, have had some small share in their after treatment, and, at least, had full and ample opportunity for accurate observation and the drawing of my own conclusions.

The saving of life in appendicitis can be covered by three headings: (1) When to operate; (2) when not to operate; and (3) the treatment of diffuse suppurative peritonitis.

(1) *When to Operate.*—The startling revelations of the operating table in apparently mild cases of appendicitis, the low mortality and the rapidity and permanency of recovery, when taken in the early stage, are steadily forcing conservative men to advise operation earlier and earlier. The widespread lay knowledge of this disease is making the acceptance of this advice an easier matter every year. The repeated sight of gangrene, perforation, abscess, and other complications in cases with no alarming symptoms, the sudden rekindling of cases apparently safely convalescent, and the failure of all the cardinal signs at times, have literally whipped me out of the position of conservatism which I set out to practice eleven years ago. In all cases seen early I would now advise an immediate operation.

In advocating this procedure I fully realize the consequences of such dogmatism. It means that in a long series of cases with hasty diagnoses usually made at one visit, an occasional error will be made and a beginning typhoid, an acute pyelitis, or a patient with kidney colic will be subjected to an unnecessary operation; but when we compare such a series with one in which operation has been delayed until each case presents a typical picture, I believe we will all agree that it is better that the very few should suffer unnecessary pain and expense than that the many should lay down their lives.

Theoretically, the lack of preparation in these acute cases would militate against immediate operation; practically they recovered just as surely as the well-prepared cases, if perforation or peritonitis are absent.

Operation During Subsiding Symptoms.—Quite a number of cases reach the hospital, or are seen by the surgeon when the acute attack is manifestly subsiding, and the question arises how long to wait before operating. Such patients are usually in good condition, having eaten little and been well purged. If a waiting policy is decided on, several days will be required in bed and several more in the house on account of soreness. If operated upon at once, much time from business and anxiety of waiting is saved. One should always remember how insidiously a subsiding case may rekindle and become alarmingly acute, and should hesitate to leave such a case where an immediate operation cannot be had.

Nor should we forget the difficulty of differentiating a true subsidence from an apparent one caused by gangrene of the appendix. This point may tax the resources of the most experienced. Operation during apparent subsidence may save, not only time in bed, but often life itself.

(2) *When Not to Operate.*—In a mild case close to a hospital, or in a case seen late with manifestly decreasing symptoms, it may, in this or that individual instance, be a comparatively simple question. On the contrary, to weigh the chances of subsidence and removal to a hospital, against a night operation with a bad light and no assistance in unfavorable surroundings, is the kind of problem that adds years to one's life.

To relegate a case of Oschner's treatment as a substitute for operation when it is so far advanced that one is afraid to operate is a question requiring the very acme of surgical judgment, attained only by years of experience, sorrow and hard work. I should far rather have an inexperienced man operate upon me early than to have him decide this vital question about me later; I would sooner trust to his hands than his head. In this connection it may be said that former successes with this method in peritonitis of tubal origin should not influence us too greatly in peritonitis from a ruptured appendix, for the two are very different.

(3) *The Treatment of Diffuse Suppurative Peritonitis.*—Next to earlier operation in appendicitis the greatest advance in the saving of life has been in

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the treatment of diffuse suppurative peritonitis. Owing to the work of Fowler, Oschner and Murphy, we have of late made a most decided reduction in the high mortality of these late cases, and unless specific antitoxins are evolved we will probably not do much better for years to come with this heavy end of the mortality column.

The first of the economic questions, whether an operation for appendicitis should be done in a hospital or a private home, is not so often asked as formerly, for the public now appreciate the "factor of safety" in the hospital, which cannot be reckoned in money.

But viewed from the standpoint of dollars and cents, I believe the balance will be oftener in favor of the hospital. In the average hospital case a special nurse is unnecessary, while in a private home she is always a necessity.

The cost of an anæsthetist and assistants, saved in a hospital, by our "priceless" internes, will also help to turn the scale.

The "*choice of incisions*" is a question of foremost importance in the economics of appendicitis. By a proper choice we may be able to cut down the stay in bed by weeks, avoid a hernia and a second operation.

The *median incision* should be employed when some pelvic operation, in addition to appendectomy, is known to be needed. All women with the diagnosis of appendicitis should have a vaginal examination made to eliminate tubal trouble. In doubtful cases with negative vaginal findings the McBurney incision should first be made, for if through it stretched to admit half a hand the pelvic organs are found to be normal, at least two weeks in bed have been saved the patient. If these organs are diseased, the gridiron will do her no harm, and will not retard her convalescence. Exploration, if it must be done through an incision, should be done through the one that will heal firmly quickest.

The Rectus Incision.—When in doubt as between the appendix and gall bladder, and the appendix cannot be reached through the short, high rectus incision, it is best to make an additional gridiron rather than prolong the first cut downward. Not only will the two short wounds heal more firmly with far less danger of hernia, but possible paralysis of the right rectus from cutting its nerve supply will also be avoided.

The McBurney, or gridiron, incision is the incision of choice in most cases. When closed with its layers at right angles, it gives a wound calculated to stand the strain of work earlier than any other.

In abscess cases the pus is avacuated without invading the general cavity oftener than by other incisions; for the large majority of abscesses are post cæcal, and the incision far out exposes the line of cleavage between the cæcum and the iliac wall. This hugging of the iliac wall puts the distended cæcum like a natural cofferdam between the focus of infection and the general cavity, and makes radical work far safer in the nonadherent post-cæcal cases. Removal of the appendix in such cases can be done with comparative safety behind this buttress, and a second operation not infrequently avoided, a point that cannot be too strongly emphasized.

When a wide wound of exit is needed, the McBurney can readily be made to gape by cutting the internal oblique above or below.

Drainage.—To drain the abdomen of a workingman is frequently to drain the resources of his entire family. This question cannot be remedied by failing to drain cases that demand it; we must operate earlier to do away with drainage—we cannot abolish it. I have found the drain a very potent argument for early operation when a sinking man begins to grasp at the straws of delay.

I recall a case of a machinist with a rapidly advancing case seen eight hours from its inception. It was midnight, and he asked why it could not be postponed until morning. He wanted to know the difference. I replied: "The difference of drainage. If I operate tonight you will probably be sewed up tight, which means ten days in bed and a sound belly wall. If you wait until morning, it will probably mean propping open the wound with a wick of gauze, with from three to six weeks in bed, the possibility of a rupture and a second operation to cure it." It so happened that he was put in the room with a man upon whom I had operated two weeks earlier in the late stages of diffuse peritonitis. He left the hospital in ten days, with his room-mate still in bed and draining freely, both converts to the early operation.

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In certain desperate cases of advancing peritonitis all other considerations are sunk in the bigger issue of saving life. But in quite a large majority of drainage cases we expect recovery, the big issue is not paramount. We should in these not only provide for adequate drainage, but do so with the least possible damage to the abdominal wall, and leave its cut or separated parts in such relation to each other that a good functional result may be confidently looked for.

Adherent abscesses pointing anteriorly should be evacuated either through the fibers of the rectus or through a gridiron, according to their location. If we go too far out for a rectus incision or too far in for a gridiron, we fall into the tendonous interval between these parts in which hernia is almost certain to follow drainage. By partially closing the wounds without tension and sewing short rubber tube drains into the abscess cavity they drain or heal more quickly, and are far less liable to be followed by hernia than when the internal oblique is cut across and partially repaired.

There is a class of cases with a small focus of pus or free oozing from adhesions, or when it is feared that contamination has taken place, in which a small drain of split rubber or a little cigarette, the so-called "safety drain," directly to the area is all that is needed. I wish to suggest here what I have not yet put into practice, the introduction of the safety drain through a stab in the internal oblique above or below its line of closure. This seems to me better than draining through all the structures of the gridiron, for being near its upper or lower angle, it leaves a stronger wound than one with a weak center. It has the advantage over an additional stab wound beside the gridiron, of being readily dilated with forceps if occasion should demand.

In the worst class of cases with large adherent abscess or diffuse peritonitis it is wise to think only of the life at stake and put in free drains through ample wounds.

I prefer a single incision close to the iliac wall with the internal oblique cut below its line of separation, one roll of gauze, usually unprotected iodoform, directly to the focus of infection and a large cigarette or split rubber into the cul de sac, resting against the iliac wall laterally. This not only steadies the drain, but I feel less fear of obstruction or subsequent adhesions than when the intestines surround it on all sides.

Secondary Suture in badly gaping wounds after the drains are out will not only save much time in bed by proper approximation of its parts, but will materially lessen the probability of hernia. In order to put such wounds into condition for suture I know of no better application than hot fomentations of chloral hydrate solution, two grains to the ounce. I have seen ugly, foul-smelling wounds rapidly clean up under its use even when the intestines were plainly exposed.

Treatment of the Stump.—In all drainage cases the stump should be tied with catgut, and if stitches are needed or a purse-string is used to relieve the gas pressure, these should also be of small, chromic catgut rather than silk or linen. I have seen two cases recently in which this little tension loop of linen unduly prolonged the suppuration, which did not close until it was extended, when healing promptly followed.

REPORT OF CASES.

The following report does not include appendectomies done in the course of other abdominal operations. There were fifty-three in all, and the operations were performed in five or six different hospitals, in private homes and farm-houses. In scarcely three consecutive cases have I had the same assistants, and twice there was no one save the anæsthetist.

Seven were interval cases. All recovered without complications or sequelæ, with an average stay in hospital of about two weeks.

Eight were sub-acute. All recovered without sequelæ. One case was drained as a safety measure, as dense adhesions were encountered. There was free flow of pus, but the patient recovered with a sound abdominal wall. The average stay in hospital was about two weeks.

Ten acute cases were seen early enough or conditions inside justified closure of the abdomen. They were 8, 24, 8, 20, 24, 8, 12, 10, 24, and 36

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hours in duration from the earliest symptoms of the acute attack. All recovered without complication or sequelæ; length of stay in hospital or house about two weeks.

Two acute cases, 14 and 16 hours in duration, were drained with safety drains; both recovered without complications or sequelæ. Length of time in hospital about three weeks.

Six post-cecal abscesses, not adherent to the anterior abdominal wall, were encountered. The peritoneal cavity was invaded, and the appendix was removed in all, and all recovered. One returned with sub-acute obstruction a year later and was relieved entirely by operation. Their average stay in hospital was one month and ten days.

Three adherent abscesses were opened without going into the general cavity. The appendix was removed in one, and the sloughed organ was extruded with the pus in the second. The third drained freely, and did well for twenty-four hours, and then suddenly collapsed and died. Post-mortem showed the drained cavity intact and dry. A second abscess back of the bladder had ruptured.

The first two had no complications or sequelæ, and stayed in bed or hospital about four weeks.

One nonadherent abscess was encountered internal to the cecum, against the posterior abdominal wall. She did well for three days, but suddenly developed septic peritonitis, from which she quickly died.

Sixteen cases had diffuse suppurative peritonitis. They were 48, 96, 96, 48, 60, 60, 54, 60, 36, 62, 48, 48, 100, 72, 96 and 56 hours in duration from the first acute symptoms. Eleven recovered; as sequelæ, there were two hernias—one that gives no trouble, and one that is so large that it must be repaired. The average stay in hospital in bed was five weeks.

Five died—two adults and three children under ten—they were 48, 100, 72, 96 and 56 hours in duration.

Twenty-nine of the fifty-three cases—more than half—were drained.

Apart from the loss of life in these late cases I trust that the economic value of the early operations has been clearly shown by the foregoing report. When the abdomen is closed it means about ten days in hospital for a city patient and two weeks for one who has to travel, with the danger and cost of a second operation practically eliminated. Drainage adds from two to three weeks to the hospital board bill; there is usually a special nurse, and always a bill for the many necessary dressings. Hernias, fistulæ and obstructions are frequent, dangerous and costly sequelæ in these late operations.

SUTURING IN TRACHELORRHAPHY.

By JAMES W. HENSON, M. D., Richmond, Va.,

Professor of Surgical Anatomy and Lecturer on Principles of Surgery, University College of Medicine; Surgeon to the Virginia and William Byrd Hospitals and the City Home, Richmond, Va.

In examining the results after trachelorrhaphy by the usual technique, where the sutures are introduced so as to include a little of the mucous membrane at each margin of the denuded surface, we often notice that the wall of the cervix in the line of union is decidedly thinner than elsewhere. Hoping to lessen, if not prevent, this defect, the writer, after observing the marked improvement in result in perineorrhaphy in the cases in which the sutures were made to avoid the skin and mucous membrane, determiend to try this method of suturing in trachelorrhaphy.

This plan has been pursued for sometime with the result that in every case the tissues in the line of union are thicker and firmer than after opera-

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tions by the usual suture method, proving that there is a better approximation of the coats in the cervical wall.

A suture after tying is more or less elliptical in outline, depending upon the degree of tension.

In the usual trachelorrhaphy suture the fibro-muscular coat of the cervix lies in the ends of the ellipse.

As the suture is tied the mucous membrane of the vaginal surface of the cervix is drawn toward that of the cervical canal, and the fibro-muscular tissue is at the same time folded upon itself, and its central part crowded back by this approach of one mucous membrane to the other.

When a suture, which does not engage the mucous membrane, is tied, there is less infolding of tissue because there is less in its grasp, and consequently there is better approximation of the central part of the fibro-muscular coat.

As this coat is closely adherent to the mucous membrane, the margin of the latter will be sufficiently approximated for union when the former is brought together by sutures. Thus we get a thicker wall at the line of union.

PLEURISY AND PNEUMONIA SECONDARY TO INFLAMMATION OF INTRA-ABDOMINAL ORGANS.

By G. PAUL LAROQUE, M. D., Richmond, Va.

An exhaustive study of this subject justifies a statement of at least two facts, which I am prepared to prove from a study of clinical cases, autopsies, and a review of the essential facts of pathology and anatomy of the abdominal and thoracic cavities:

1. Pleuritic effusions and pneumonia are very much more commonly secondary to inflammation within the abdomen than is generally believed.

2. The terms "ether pneumonia" and "anæsthetic pneumonia" are unjustifiable. These agents play a very insignificant, if any, role in the production of the affections. In cases of pleurisy or pneumonia following abdominal operation I would emphatically deny that the anæsthetic is causative.

Five years ago I operated upon my first personal case of typhoid intestinal perforation. The man was desperately ill, and at the time of the operation was suffering with hypostatic congestion of the lungs, prohibiting general anæsthesia. The operation was performed under cocaine anæsthesia. Two perforations in the cecum were closed. The patient recovered from the effects of the operation, and four days later developed pneumonia, which was fatal in twnty-four hours.

In September, 1907, I was called to the country by Dr. George Davis to operate upon a patient for sub-diaphragmatic abscess. This man (Case No. 894), previously in good health, was seized three weeks before the operation with an ordinary attack of acute appendicitis. Four days before I saw him he began to expectorate large quantities of muco-purulent material. From these signs, together with flatness over the base of the right thorax, Dr. Davis made a diagnosis of sub-diaphragmatic abscess, with empyema and rupture into a bronchus. I confirmed the diagnosis, made an incision at a point corresponding to the site of the abscess below the diaphragm, removed a pint of pus, drained a sinus leading to the cecum, and another leading to the pleural cavity. The patient made a good recovery.

In December, 1906, a robust, middle-aged man (Case No. 761), was brought to Dr. Stuart McGuire's clinic, at the Virginia Hospital, suffering with pain over the region of the eleventh and twelfth ribs posteriorly on the right side, hectic temperature, cough, muco-purulent expectoration, and physical signs of peri-nephritic abscess and of empyema ruptured into the bronchus. Dr. Mc-

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Guire drained the peri-nephritic abscess, and the patient made a prompt and complete recovery.

In the spring of 1907 a colored woman (Case No. 787) was admitted to Dr. McGuire's clinic with widespread peritonitis, secondary to rupture of a pelvic abscess. She was operated upon promptly, and the peritoneal cavity drained. A week later she developed a hacking cough, and rapid respiration and physical examination revealed a pleural effusion, three fingers in breadth, on the right side. At the end of two weeks the pleural effusion had disappeared coincidentally with the healing of the wound.

At the present time there is a fifth case under observation at the Virginia Hospital operated upon ten days ago for the drainage of a large peritoneal abscess. Four days after operation physical examination revealed a small pleural effusion on the right side, which has now disappeared, leaving only the signs of thickening.

During the past summer I was informed of a sixth case occurring in the practice of my friend, Dr. Stuart Michaux, in which, after the removal of an acutely inflamed appendix and drainage of a small abscess, the patient developed two weeks later the physical signs of a pleural effusion, from which he recovered promptly, and has since been well.

In none of these cases was there any evidence of tuberculosis, though repeated examinations were made.

In looking over old case records I find in the fatal cases of diffuse peritonitis frequent notes that they died of pneumonia. These, in the cases in which ether was administered, were attributed to ether, while those deaths in which chloroform was used were assigned to "taking cold." Since, however, the question of anæsthesia pneumonia is at the present time denied by all students of the subject, it is unnecessary to take further consideration of the variety of anæsthetic employed. The fact is, there are a sufficient number of cases of pleural effusion, pneumonia and empyema recorded, in which the obvious cause was so clearly a septic focus within the abdominal cavity, that surgeons must be continually on the watch for intra-thoracic complications, in such cases.

A comprehensive study of this subject has been exceedingly profitable, and I will quote some figures based, first, on autopsy findings in patients on whom no operation had been performed; second, on large numbers of clinical cases recorded, and, finally, on experimental research.

In the City Hospital of New York[1] in one year 181 autopsies were reported. Of these forty-nine cases (or 33 1-3%) show association of pleurisy or pneumonia, or both, with inflammatory diseases located within the abdomen. The various intra-abdominal lesions included bile-tract infection, pancreatitis, cirrhosis of the liver, syphilis of the liver, suppurative lesion of the kidney, acute inflammation of the supra-renal capsules, splenitis, peri-splenitis and infarction of the spleen, sub-phrenic abscess, gangrene of the liver, inflammation of the mesenteric and retro-peritoneal lymph nodes, hemorrhagic gastritis, gastro-intestinal ulcerations, uterine fibroids, endometritis and malignant disease of the peritoneum. These cases do not include the tuberculous infections nor the cases of pleurisy having their origin in the lungs, but are limited strictly to those in which the pleural or pulmonary complications were associated primarily or secondarily with intra-abdominal infection.

A clinical study of the causes of pleurisy based on 500 cases reported by Fraley from the Pennsylvania Hospital[2] reveals some interesting facts. Of these 26 cases, or 5.2%, were traced directly as a secondary result of intra-abdominal infection. In 12 of these the pleurisy was an immediate complication, while the remaining 14 followed the abdominal disease within six months. Of the total 500 cases 249 were complicated by lesions elsewhere than in the thorax, and of these 17, or approximately 7%, occurred with inflammatory lesions within the abdomen. In 233 of the 500 cases a definite exciting cause was determined. Of these 12 were attributed to primary intra-abdominal infection and one to anæsthesia, five cases followed typhoid fever while the patients were in the hospital, two were caused by appendicitis, two

[1] Annual Report, 1905.

[2] Amer. Jour. Med. Sciences, May, 1907.

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by abscess of the liver, one by subphrenic abscess, one by cholecystitis, and one followed acute "gastritis."

Six hundred cases of lobar pneumonia were studied by Tuttle and Carter [3] in the Presbyterian Hospital in New York. In 82 cases the pneumonia was positively attributed to other diseases, and of these 21, or nearly 25%, were secondary to such intra-abdominal infections as typhoid fever, gastro-enteritis, bile tract infection, cirrhosis and syphilis of the liver.

Of 500 cases of pneumonia in children reported by John Cooke,[4] of Chicago, 3.8% were distinctly secondary to ileo-colitis.

This gives a total of 1,600 cases of pleurisy and pneumonia studied, and in which it was clearly determined that the thoracic disease was secondary to intra-abdominal infection in 83 cases, or 5.2%. Of all the exciting causes of pneumonia and pleurisy the only ones which exceed in frequency intra-abdominal infection are diseases of the respiratory apparatus, "taking cold" and rheumatism. The latter acts more often only in the production of pleurisy. Thus of Fraley's cases 148 followed pulmonary disease, 46 followed rheumatism, 14 followed intra-abdominal infection within six months. Of 233 cases in which the exciting cause was definitely determined 65 followed "taking cold," 42 followed bronchitis, 52 were caused by pneumonia, 14 by phthisis, 15 followed traumatism of the chest, such as broken ribs and contusion, 5 acute rheumatism, 12 were caused by drunken debauch, 12 followed intra-abdominal infection. This leaves only 16 cases following all other causes combined, and 4 of these are attributed to obstinate constipation and obstinate vomiting.

To view the subject from the other point—namely, the determination of what percentage of abdominal cases are complicated by pleurisy—is a very much more difficult task, owing to the incompleteness of case reports. It is worthy of note that few writers have emphasized pleural or pulmonary lesions as complications of peritonitis and other intra-abdominal infections, but a careful study of the case histories in recent articles by Blake,[5] Hotchkiss,[6] Murphy,[7] Harte and Ashhurst,[8] Scott [9] and others shows clearly that pleural and pulmonary infections are by no means uncommon both before and after operation.

Caro [10] believes that at least 16% of all cases of cirrhosis of the liver are complicated by pleurisy. Villani [11] claims that a small pleural effusion on the right side is a constant result of cirrhosis. Auerbach [12] emphasizes the great frequency of pleural effusion with sub-diaphragmatic abscess, and found this complication in 101 of 179 patients examined. Tilger [13] found in 122 cases of general peritonitis that 25% of them had pleurisy. This observation is confirmed by Auerbach. The same percentage was found at the Charite in puerperal peritonitis.

As a complication of typhoid perforation it has been noted that pleurisy and pneumonia occur almost as frequently when the patient is not operated on as when he is.

Of 13 deaths occurring in the Gynecological Department of Mount Sinai Hospital,[14] New York, two were caused by pneumonia secondary to puerperal infection, and neither case was operated upon. One case died of abscess of the lung secondary to pelvic abscess about two weeks after a small vaginal incision.

The question of the etiology of post-operative pneumonia, especially those cases previously attributed to anæsthetics, has been pretty definitely settled within the last few years.

At the German Surgical Congress in 1905 [15] many interesting and practical facts were established. Czerny believes that the anæsthetic has no relation

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[3] Annual Report Pres. Hosp., 1904.
[4] Illinois Med. Jour., 1905.
[5] Amer. Jour. Med. Sciences, March, 1907.
[6] Annals of Surg., August, 1906.
[7] Surg. Gyn. and Obs., June, 1908.
[8] Amer. Surg. Assoc., 1903.
[9] Univ. of Penn., Bulletin June, 1905; Int. Clin., Vol. III, 1908.
[10] Prog. Med., September, 1906.
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Hospital Reports, 1905.
[15] Annals of Surg., December, 1905.

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to the development of pneumonia, but that the infection in a large majority of cases reaches the lungs and pleura from the abdomen by way of the lymphatics perforating the diaphragm, and in some cases as the result of the aspiration of pneumococci. He reports thirteen hundred laparotomies in which post-operative pneumonia developed in 52 cases; of these 14 were secondary to operations on the bile tract, 24 to operations on the stomach, 11 to operations on the female genitalia, and one followed appendectomy. From these figures it is obvious that the liability to thoracic disease is increased when the suppurative process is located in proximity to the diaphragm or in the pelvic organs. Czerny believes that the frequent thoracic complications following operations on the pelvic organs is accounted for by the use of the Trendelenburg posture, thus allowing infection to gravitate to the upper abdomen. In 52 cases pneumonia was a complication.

Three thousand two hundred and forty-eight operations performed on structures in various regions of the body, studied by Henle,[16] revealed that pulmonary complications were found in 5.3%. When, however, only the abdominal operations were considered, pulmonary complications were found in 11.3%. Trendelenburg[17] reports that 5% of all patients upon whom laparotomy has been performed develop pneumonia, and states that this complication has long been shown not to be due to ether any more than to chloroform. Krœnlin[18] from 1,409 cases determines that 5.6% suffered post-operative pulmonary complications.

The anatomic and pathologic reasons for the frequency of pleurisy and pneumonia during the course of an abdominal infection have been clearly shown from laborious scientific work conducted in the last three years. In 190 Payr[19] found, experimentally, that carmin, when injected into the diaphragm of dogs, was found in eighteen minutes in the lymphatics as high as the bronchi, and only after twenty-five minutes could it be detected in the carotid artery. Muscatello[20] has shown that normally there is a flow of lymph from the various portions of the peritoneal cavity to the diaphragm, and he also noted that colored particles of fluid injected into the peritoneum were taken up first into the base of the diaphragm and then into the lymph spaces beneath. Dubar and Remmy,[21] after injecting carmin into the peritoneal cavity, recovered it from the thoracic duct in seven minutes. Kolossow, Maccallum[22] and others have shown that lymphatics from the peritoneal surface penetrate the diaphragm, emptying into the mediastinal nodes.

The most actively absorptive portions of the peritoneum are the diaphragmatic and omental areas; the greatest amount occurs at the diaphragm. Durham[23] found bacteria in the lymph nodes of the anterior mediastinum six minutes after the injection of septic material into the peritoneum. The mediastinal lymphatics become turgid with blood very soon after the beginning of peritoneal injections. Buxton and Torrey[24] found the lymphatics in the anterior mediastinum distinctly blackened in from five to fifteen minutes after the injection of lamp black into the peritoneal cavity.

All of these experiments definitely prove that the diaphragm is a very important route of transmission of infection, and even of inert material from the peritoneum to the thorax.

When, however, the infection is of puerperal origin the process is primarily sub-peritoneal, and it has been conclusively shown from the studies of Murphy[25] and others that the sub-peritoneal tissue possesses great absorbability.

It is unfortunate that the cause of all deaths following peritonitis cannot be definitely determined by a complete autopsy. There are, however, a sufficient number of cases to demonstrate that pneumonia and pleurisy are exceedingly common. Most writers dismiss the subject with the statement

[16] Prog. Med., September, 1906.
[17] Prog. Med. March, 1908.
[18] Ibid.
[19] Annals of Surg., December, 1905.
[20] Hotchkiss, Annals of Surg., August, 1906.
[21] Ibid.
[22] Murphy, Surg. Gyn. and Obs., June, 1908.
[23] Ibid.
[24] Ibid.
[25] Ibid.

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either that such complications are rare, or attributable to the anæsthetic, both of which statements are false.

Deductions from this valuable experimental work indicate clearly that when bacteria are brought into relation with the lymph spaces within the peritoneal cavity, they are conveyed very quickly through the lymphatics of the diaphragm and mesentery into the lungs and pleural cavity, and if conditions are suitable pneumonia and pleurisy are the results. It is a significant fact that in general peritonitis the right pleura is by far the more frequently affected. In 30 cases reported by Auerbach[25] the right pleura alone was affected in 13, the left alone in one, and in 10 cases the effusion involved both pleural cavities. It has been as a rule expected that the pleurisy and subphrenic abscess occur on the same side, the right especially, as it has been shown that no free communication exists between the right and left lymphatics of the diaphragm. The frequency of involvement of the right pleura and lung is explained by the anatomic fact that the trans-diaphragmatic perforating lymph channels are limited to the right side in 75% of the cases, and also on account of the relative prevalence of peritonitis originating on the right side, and finally from the relation from the capillary space just above the liver, at which point suction occurs.

CONCLUSIONS.

(1) Pleurisy and pneumonia are much more frequently caused by infectious diseases within the abdomen than has hitherto been believed.

(2) The right side is more frequently involved than the left.

(3) It is the duty of surgeons to constantly bear this in mind and carefully examine their patients for pleural and pulmonary complications during the course of intra-abdominal infections and after operations.

(4) The frequency of abdominal infection as a cause of pleural effusion and pneumonia calls for a painstaking examination of the intra-abdominal organs in each case in which the signs of intra-thoracic inflammation exist.

(5) The infection of the pleura and lung following intra-abdominal inflammation is conveyed through the diaphragm, omentum and mesentery by way of the lymphatics.

(6) "Ether pneumonia" does not exist and the term anæsthetic pneumonia should be entirely discarded.

(7) When during the course of an intra-abdominal affection pneumonia or pleurisy should be discovered, they constitute no contraindication to operation, but, on the other hand, urgently call for drainage of the primary focus of suppuration.

219 *East Grace Street.*

[25] Prog. Med., September, 1906.

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Report of the Necrological Committee.

COMMITTEE.

LIVIUS LANKFORD, M. D., Norfolk, Chairman.
R. H. LATANE, M. D., Buchanan. STEPHEN HARNSBERGER, M. D., Catlett.
S. T. A. KENT, M. D., Ingram. JAMES E. TOMPKINS, M. D., Fredericksburg.

Your Committee has received information of the death of each of the Members named in the report of the Secretary; but most earnest effort has failed to elicit information concerning several of the deceased members, and we have been forced to write sketches from the items given in the Biographical Register.

Dr. Aetius Moreau Adkins.

Was born in Sussex county, Va., March 22, 1841, and died at his home at Vicksville, Southampton county, Va., October, 1908. After receiving his academic education from Barn Tavern and Berlin Academies, he graduated in medicine from the University of Virginia in 1868. He was elected a member of the Medical Society of Virginia 1872, and attended eight or ten sessions. He was also a member of the Seaboard Medical Association.

Dr. John S. Apperson.

Died at his home in Marion, Va., August 13, 1908, after a long and successful career. He was a man of unusual intellectual attainments, and kept fully abreast with the progress of his profession, and was also a man of splendid business ability, as shown by the results obtained in this line. He was loved and respected by his fellow practitioners as well as the laity. Honesty, energy and sincerity and kindness of heart were prominent traits in his character. In fact, he was a model type of a true Virginia gentleman. He was born August 21, 1837, in Orange county, Va. He came of highly respectable parentage, but not wealthy—his father having a large family, and the poor educational advantages existing in those days necessarily handcapped him in this respect. But being full of energy and determination to succeed, he left his father's fireside at an early age in search of some field of usefulness. He came to Smyth county in the year of 1859, and soon after became acquainted with Dr. William Faris, who, no doubt, soon recognized his natural intellectual ability, and arrangements were made for him to begin the study of medicine with the doctor, and it is said he did manual labor to pay his board. He was admired by the best citizens in the community, such as John M. Preston and others, who afterwards gave him material assistance. He pursued his studies and work with Dr. Faris until the call came for Virginia troops to enlist in the Civil War, and he was one among the very first to volunteer. He joined the Smyth County Blues, afterwards Company D, of the Fourth Virginia Infantry, Stonewall Brigade, and marched to Richmond and Harper's Ferry with his company. His extraordinary ability was again soon recognized, and he was appointed hospital steward by the late Harvey Black, surgeon of the regiment. He served in this capacity, also as physician, and attended to all the clerical work, etc.

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While filling this position the relationship and friendship existing between him and Surgeon Black was very close, and mutual confidence was soon established between them. He enjoyed the respect and admiration of many officers of high rank. "When the surrender at Appomattox was pending he came to Wytheville in company with Dr. Samuel Sayers, who was also an army surgeon in Dr. Black's department, expecting to join General Joseph Johnston or Kirby Smith," but it soon became evident that the Confederate cause was lost, and that the terrible struggle was over. When he returned from the army he again took up his abode with Dr. Faris and resumed his professional studies. A few months later he moved to Grayson county, where he practiced his profession for several months, but owing to the ill health of his former preceptor, he again returned to Chilhowie to take charge of Dr. Faris' practice.

In the year of 1866 he was financially able to take a course at the University of Virginia, and graduated from that institution in 1867, after which he returned and resumed his former practice.

In 1868 he was united in marriage to Miss Ellen V. Hull, of Marion, a member of one of the most influential families of this portion of the State. He continued in active practice in the neighborhood of Chilhowie for the next ten years.

In 1880, or thereabout, the question of building a State institution for the insane to be located somewhere west of New River began to be agitated. In this move Dr. Apperson took a lively interest, and when it was decided by the Legislature to erect such an institution, he was selected as a member of the commission to select a suitable site, and was afterwards a member of the building committee. He rendered the State most valuable service, and his energy was untiring and his mind resourceful. When the institution was completed and opened he was elected a member of the medical staff, with Dr. Harvey Black as superintendent. Their former relations were renewed, and proved most pleasant.

Soon after he became connected with the Southwestern State Hospital he was so unfortunate as to lose a loving daughter and his devoted wife. The year following his friend and associate, Dr. Harvey Black, died, which, of course, added sorrow to sorrow. A few months after the death of Dr. Black he severed his connection with the institution and moved to Glade Springs to enter private practice, and accept the position as physician to the Southwest Virginia Institute.

In February, 1889, he was married to Miss Elizabeth A. Black, the only daughter of Dr. Harvey Black. This union was a very happy one, and blessed with four children. He was the prime mover in the establishment of the Staley's Creek Manganese and Mineral Company, and succeeded in getting a railroad constructed across the mountain to Rye Valley. He was connected with this corporation until the time of his death.

He was appointed executive business commissioner to represent the State of Virginia at the Columbian Exposition held in Chicago in 1893. His work was entirely satisfactory and crowned with success.

Dr. Apperson was a member of the Medical Society of Virginia, and attended most of its sessions. He was Vice-President in 1881, 1882 and 1885, and Chairman of the Necrological Committee 1891-'97. He took an active part in Society work, papers, discussions, etc.

For sometime previous to Dr. Apperson's death, he was in rather delicate health, and limited his professional work to that of consultation and to the practice for a few of his most intimate friends. In the medical profession his loss is keenly felt, and all who knew him realize that a great and good man has passed from our midst.

He is survived by his wife and eight children.

Dr. J. William Austin.

Was born in Bedford county, Va., 1866, and died January 2, 1908. After his academic education at the Virginia Military Institute, he studied medicine at the Baltimore Medical College, from which he graduated 1891. In October, 1891, he passed the Medical Examining Board of Virginia while a Resident Physician in the Maryland General Hospital. Afterwards he located at Bedford City, Va., and joined the Medical Society of Virginia 1893. He attended

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several sessions, and was a contributor to several of the medical journals. He was surgeon to Longdale Iron Company, and also medical examiner for two or three life insurance companies.

Dr. John Lawrence Banks.

Was born at Madison Courthouse, Va., February 24, 1834, and died at his home at Oak Forest, Cumberland county, Va., December 20, 1907. His academic education was received at the preparatory schools of the University of Virginia, and he graduated in medicine from Jefferson Medical College, of Philadelphia, 1856. He joined the Medical Society of Virginia 1905, when seventy-one years of age.

Dr. Randolph Barksdale.

Died November 18, 1907, at his home, in Petersburg, Va., aged about seventy-seven. He graduated in medicine from the University of Pennsylvania in 1852. For many years he was superintendent of the Central (Virginia) State Hospital, near Petersburg—the first asylum for the insane ever established for colored people only. He joined the Medical Society of Virginia in 1877. He is survived by his widow and four children.

Dr. R. L. Barrett.

One of the most prominent physicians of Louisa county, died after a prolonged illness at his home at Louisa, Va., March 17, 1908, aged seventy-four. He was beloved by all classes of citizens, and many came for miles around to attend his funeral and pay their last tribute to one who had spent his long life in good deeds among them.

Dr. William Janney Best.

Was born in Loudoun county, Va., August 6, 1834, and died at his home near Clearbrook, Frederick county, Va., February 5, 1908, aged seventy-three years. He graduated from the medical department of the University of Maryland 1856, and was elected a member of the Medical Society of Virginia 1905. He was an ex-president of the Medical Society of Frederick and Clarke Counties, Va.

Dr. Otto Christian August Bindewald.

Was born in Germany September 4, 1865, and died at his home at Portsmouth, Va., November 25, 1907. His academic education was received from Real Gymnasium Giessen, Hersen, Germany, and graduated in medicine from the University of Virginia 1892. After a post-graduate course at the New York Polyclinic and Post-Graduate College, he passed the Medical Examining Board of Virginia 1893, and joined the Medical Society of Virginia 1900. For a year or two before his death his health was bad, and he had to retire from practice.

Dr. George Corrie.

Died at his home at Knott's Island, N. C., October 10, 1908. He was born in the city of Richmond, Va., 1857; graduated in medicine from the Medical College of Virginia 1888; passed the Medical Examining Board of Virginia the same year, and became a member of the Medical Society of Virginia 1893, while practicing in Princess Anne county, Va., which membership he retained till his death. He moved to Knott's Island, N. C., about 1896. He died after a lingering illness of many months of Bright's disease.

Dr. David B. Drewry.

Died at his home near Drewrysville, Va., November 29, 1907, aged thirty-five years. He graduated from the Medical College of Virginia, 1897, and joined the Medical Society of Virginia 1899. He was medical examiner for several life insurance companies, and physician to Camp Manufacturnig Company, of Arringdale. His death was very unexpected. He was prominent in

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the profession of his section, and as a citizen. He is survived by his wife and two or three children.

Dr. Archibald H. Fulton.

Was born January 31, 1862. He graduated in medicine from Central University of Louisville, Ky., 1889; passed the Medical Examining Board of Virginia June, 1904, and joined the Medical Society of Virginia the same year. He died at his home at Gibson Station, Lee county, Va., from pneumonia March 14, 1907.

Dr. Lucien Hall.

Was born at Staunton, Va., December 6, 1831, and died at his home at Yancey's Mill, Albemarle county, Va., December 20, 1907. He graduated in medicine from the University of the City of New York in 1858. He was a surgeon in the Confederate Army, 1861-'65. He was elected a member of the Medical Society of Virginia 1876, and an honorary member thereof in 1906.

Dr. Wilmer Hodgson.

The Committee regrets that it has no memoranda concerning Dr. Hodgson other than that he graduated in medicine from the Medical College of Virginia in 1867; joined the Medical Society of Virginia 1903, and died February 17, 1908.

Dr. Daniel A. Langhorne.

Was born about 1827 in Lynchburg, Va., where he died February 10, 1908. He graduated in medicine from the Medical Department of the University of Pennsylvania 1848. He signed the "call" for the convention organizing the Medical Society of Virginia, in Richmond, November 2, 1870, but was unable to attend. So that his actual membership dated from the session held in Lynchburg, 1871. On account of bad health, he was able to serve only a part of the term of the War Between the States in the Confederate hospitals at Lynchburg. He always took active interest in the affairs of the Society.

Dr. C. Rosser Massey.

Died at his home at Spotsylvania, Va., November 28, 1907, after about three months' illness. He was born in 1867. He graduated in medicine from the University of Maryland, 1892, and joined the Medical Society of Virginia 1893. He was a prominent farmer as well as physician, and took active interest in all that concerned the affairs of his community. He leaves a widow and three children.

Dr. George Washington McNeil.

Was born August 15, 1869, at Rocky Mount, Franklin county, Va., where he practiced, and died during 1908. He received his academic education from Stuart Normal College and Rocky Mount graded schools. He graduated in medicine from the College of Physicians and Surgeons of Baltimore 1896, passed the Medical Examining Board of Virginia September, 1896, and joined the Medical Society of Virginia 1901. For a short time he practiced in Patrick county, Va., where he was a member of the Board of Health for that county, and was also assistant surgeon to the Mothers' Home at Stuart, Va.

Dr. Frederick Fairfax Ninde.

Was born in King George county, Va., July 17, 1860, and died at Colonial Beach March 10, 1908. Your committee acknowledges thanks to Dr. M. M. Walker, the honored president of the Northern Neck Medical Society, for the subjoined facts relative to our deceased fellow and brother. His parents were Dr. Frederick Folger Ninde, who was originally of Ridgeley Hall, Talbot county, Md., but who soon after his graduation in medicine removed to King George county, Va., where he formed a partnership with Dr. Fernando Fairfax, the father of the late Dr. William A. Fairfax, and married Miss M. Louise Brown,

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of Middleboro, King George county, a daughter of the late S. J. S. Brown, clerk of the courts of that county, whose wife was a Miss Saunders, of Caroline county, Va. On his father's side his numerous relatives reside mostly in the Middle West, one of whom was the late Bishop Ninde, of the Methodist Episcopal Church, and a resident of Michigan, and all of whom were people of prominence and distinction in their several States. Dr. F. F. Ninde graduated with the degree of M. D. at the College of Physicians and Surgeons of Baltimore, Md., in the spring of 1884. He settled in King George county, Va., at Middleboro, where, with his sisters and widowed mother, he lived and practiced his profession with great success.

A Democrat, he took from the start an active part in politics, and was soon chosen because of his executive ability chairman of the Democratic County Committee. He was elected treasurer of the county for three consecutive terms, and when he finally left the office his affairs and accounts were in perfect shape.

February 1, 1899, he was married to Miss Lucy Pratt Ashton, daughter of the late Lewis Ashton, of King George county, who survives him with four children.

In the spring of 1902 he removed to Colonial Beach, where he at once entered upon a large and lucrative practice. In connection with this he erected a handsome and commodious hotel, known as the King George House, and opened the thriving drug business under the name of Reh & Ninde. He took great interest in everything that pertained to the upbuilding of the Beach, being a member of the town council, a voluntary member of the fire department, and aided largely in the forming and encouraging the new telephone line and the establishment of private phones in the town.

In religion, Dr. Ninde was an Episcopalian, and was greatly interested in the establishment of a church at the Beach, for which purpose he contributed liberally of his means.

He joined the Medical Society of Virginia in 1886, and became a member of the Northern Neck Medical Association December 6, 1905. He had been anxious to entertain the Society, and it is upon his urgent invitation that we to-day enjoy the hospitality which he had planned and which his family and friends insist shall not be dispensed with, notwithstanding his death.

His personal qualities were those of a high man. Gentleness and kindness were predominant characteristics. The home and family ties were strong as "hoops of steel." Public spirit was manifest in his entire life. He was a leader of men, and enjoyed the confidence and esteem of the community in which he lived. He was a member of the P. O. S. of A., and the Jr. O. U. A. M., who buried him with appropriate honors.

Dr. Ina Belle Hyde Reed.

Died at her home, in Brunswick county, Va., November 22, 1907, after an illness of about five years, due to pulmonary tuberculosis. She graduated in medicine from the Woman's Medical College, of Cincinnati, Ohio, 1894, passed the Medical Examining Board of Virginia 1897, and attended several sessions thereafter. She was held in high professional esteem by all who knew her. Her remains were buried near Poplar Mount, Greenesville county, Va.

Dr. Harry Miller Rogers.

Was born near Mount Solon, Augusta county, Va., April 6, 1860, and died at his late home in Mount Crawford, Rockingham county, Va., October 3, 1908. He was educated at the University of Virginia, and graduated in medicine from the College of Physicians and Surgeons, Baltimore, Md., 1884. He began the practice of his profession at Mount Crawford, and two years later married a daughter of Dr. Dinges. He was elected a member of the Medical Society of Virginia 1886. Dr. Rogers was a popular and successful physician, and was highly esteemed by the people of his county. He was one of Rockingham's supervisors for two terms, and was elected to the Legislature (House of Delegates) in 1903, 1905 and 1907.

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Dr. William G. Rogers.

Died at his home in Charlottesville, Va., March 15, 1908, aged 87 years. He fell on the ice about six weeks before, and had since been confined to his bed. He was a native of Albemarle county, Va., and had been practicing his profession here for more than fifty years. He attended the "Old Field School" in his early youth, then the University of Virginia, and was graduated in medicine from the latter in 1844. He joined the Medical Society of Virginia in 1875, and contributed several papers to the Society as well as to numerous medical journals. He was also a member of the Albemarle County Medical Society. He is survived by his widow and two sons.

Dr. Frederick Sale.

Died at his home in Bedford City, Va., October 4, 1908. The committee regrets again that it has no memoranda concerning him other than that he was a student of medicine at the University of Virginia 1860-'61, and graduated from the Hospital College of Medicine, Louisville, 1882. He joined the Medical Society of Virginia 1891.

Dr. Thomas William Smith.

Died at his home at Bethel cademy, Va., November 27, 1907, after a brief illness of a week, due to an unexpected and complicated stomach trouble, resulting in peritonitis. He had been resident physician at Bethel Academy for thirty years. He graduated in medicine from the College of Physicians of Baltimore, 1876, and from the University of the City of New York, 1877. He then served a term in Bellevue Hospital under Professor A. L. Loomis. He is survived by an aged father, a wife and a daughter. His age at death was 53 years. He so served his profession as to be greatly beloved throughout his section. He joined the Medical Society of Virginia 1877.

Dr. William Keeling Wood.

Died at his home in Berkley, Norfolk county, Va., December 11, 1907, after a lingering illness. He was born in Elizabeth county, N. C., September 13, 1875; graduated in medicine from Baltimore Medical College 1895; passed Medical Examining Board of Virginia 1897; was elected a member of the Medical Society of Virginia 1900. He was also a member of the Seaboard Medical Association. For some years before his death he was physician to the Norfolk county, Va., almshouse. He was also Health Officer of Berkley Ward for several years.

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MEDICAL SOCIETY OF VIRGINIA.

Proceedings of the Thirty-Ninth Annual Session, Held at Richmond, Va., October 20-23, 1908.

FIRST DAY—TUESDAY—NIGHT.

RICHMOND, VA., *October* 20, 1908.

The thirty-ninth annual session of the Medical Society of Virginia was assembled in the auditorium of the Jefferson Hotel, and was called to order by the President, Dr. William F. Drewry, of Petersburg, Va., at 8:30 P. M., Tuesday, October 20, 1908. Beside a quorum of members, a number of citizens of Richmond, and guests of the hotel, were present. The Secretary, Treasurer, etc., were at their desks.

The session was opened with prayer by the Rev. James W. Morris, D. D., rector of Monumental Episcopal Church, Richmond, Va.

At the request of the local Committee of Arrangements, the Honorable D. C. Richardson, Mayor of the city of Richmond, delivered the following *Address of Welcome:*

Mr. President and Gentlemen of the Medical Society of Virginia:

I do not rise for the purpose of extending to you a mere perfunctory greeting, but knowing, as Shakespeare has expressed it, that your worth is the warrant of your welcome, I desire on behalf of the people of Richmond to return to you our sincere thanks for the honor you have conferred upon us in selecting this city as the place for your present convention. What words of welcome are necessary to members of the Medical Society of Virginia? You are all Virginians, and no words of mine can add to the strength of that assurance which you already have that you are welcome to the hearts and homes of this, the capital of the Old Dominion. Nor is that welcome less cordial to those of your distinguished guests from other portions of the country, who may honor us with their presence during the sessions of your convention.

There is no profession, to my mind, on earth, with the exception of the teacher and the minister, of more importance and usefulness than that of the physician. In other professions—in the legal profession—the innocent man may find protection from the judge and the jury, but the patient who trusts his life to the quack and the charlatan has no protection whatever, and therefore I believe that the most stringent laws ought to be enacted to root out these quacks and charlatans, and that the medical profession should be kept, as it is now, upon the very highest plane of learning and efficiency.

There is no profession which demands more of unremitting toil and application and self-denial. There is no relation on earth more close and confidential than that between the doctor and the patient, and there is no profes-

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sion which requires more of integrity and honor, for very frequently not only the life of the patient, but his honor and his good name, are confided to the care of the doctor.

Gentlemen of the Medical Society of Virginia, I greet you, and bid you a cordial welcome as members of this noble profession.

DR. L. G. PEDIGO, of Roanoke, was called upon to *respond to the Address of Welcome*, and said:

I was almost on the point of saying that an Address of Welcome is unnecessary here. It would have been an impolite thing to say, but you have spoiled us into the habit of presuming upon this welcome. We base that presumption upon many happy experiences in the past. The only regret we have is that in our busy life we do not have the opportunity to come here as often as we would like. So long as we are in the boundaries of Old Virginia, I feel that we are safe and cannot go far wrong.

The Chairman of the Committee of Arrangements, DR. STUART MCGUIRE, announced the arrangements made for the entertainment of the Society and the visiting ladies.

DR. WILLIAM D. TURNER, *Chairman of the Committee on Applications for Membership*, presented the following as the Report of the Committee—recommending that each party named be elected a member of the Medical Society of Virginia.* Recommendation, on motion, was adopted.

(*The appended postoffice list includes the alphabetically arranged names of all parties elected to membership at different times during the several days of the Thirty-ninth Annual Session.)

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Applicants Elected to Fellowship in the Medical Society of Virginia.

RICHMOND SESSION, OCTOBER 20-23, 1908.

NAME.	POST OFFICE AND COUNTY.	COLLEGE AND DATE OF GRADUATION.	PASSED MED. EXAM. BD. VA.	RECOMMENDED BY
Adair, Templeton...	Lexington, Rockbridge Co.....	Jeff. Med. Col., Phila., 1908.....	June, 1908.	W. W. Chaffin.
Anderson, H. B.....	Noel, Hanover Co.....	Med. Col. of Va., 1882.....	Prior to Board	W. F. Mercer.
Anderson, Victor V..	Lynchburg, Campbell Co.....	Hosp. Col. of Med., Ky., 1903.....	Dec., 1905.	James Morrison.
Ardan, Nicholas Ivan	Keokee, Lee Co.....	Univ. Col. Med., Richmond, Va., 1902.	June, 1902.	A. L. Gray.
Ashton, Stuart A....	Colonial Beach, Westmoreland Co.	Univ. Col. Med., Richmond, Va., 1907.	June, 1907.	Landon B. Edwards.
Berger, Bertha D....	Staunton, Augusta Co.....	Univ. of S. Calif., 1903.....	June, 1907.	James H. Garlick.
Blackwell, Karl S....	Richmond Henrico Co.....	Univ. Col. Med., Richmond, Va., 1906.	June, 1906.	A. L. Gray.
Blair, John Robin...	Churchville, Augusta Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	A. L. Gray.
Bland, James M.....	Shacklefords, King and Queen Co.	Med. Col. Va., 1905.....	June, 1905.	R. S. Martin.
Booker, Lyle Steele..	Waynesboro, Augusta Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	A. L. Gray.
Bott, William N.....	Blackwood, Wise Co.....	Hosp. Col. of Med., Ky., 1907.....	Dec., 1907.	R. S. Martin.
Brown, Benjamin....	Nokesville, Prince William Co....	Med. Col. Va., 1899.....	June, 1904.	W. A. Newman.
Bull, Jr., Charles P..	Fordwick, Augusta Co.....	S. C. Med. Col., 1905.....	Dec., 1907.	R. S. Martin.
Burke, Thomas G...	Richmond, Henrico Co.....	Ala. Med. Col., 1902.....	June, 1908.	Matt. O. Burke.
Carr, Wallace Dean.	Richmond, Henrico Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	A. L. Gray.
Catts, Samuel Rozier	Clifton Station, Fairfax Co.....	Balto. Med. Col., 1906.....	June, 1908.	S. B. Moore.
Clemmer, Charles A.	Middlebrook, Augusta Co.....	Univ. Col. Med., Richmond, Va., 1907.	June, 1907.	J. B. Rawlings. A. L. Tynes.
Cobbs, Walter H.....	Ridgeway, Henry Co.....	Med. Col. Va., 1908.....	June, 1908.	J. M. Shackelford.
Collins, George L...	Fortress Monroe, Elizab'h City Co.	Harvard Univ., Med. Dept., 1900.....	June, 1907.	Clarence Porter Jones.
Conger, Clement E..	Rockingham, Rockingham Co....	Univ. of Va., 1895.....	June, 1906.	L. B. Yancey.
Conrad, Charles E...	Williamsburg, James City Co.....	Univ. of Va., 1905.....	June, 1905.	O. C. Brunk. W. F. Drewry.
Cook, Giles B.....	Richmond, Henrico Co.....	Geo. Wash. Univ., 1903.....	Dec., 1907.	Mark W. Peyser. Thos. R. Marshall.
Crane, James Fuller.	Richmond, Henrico Co.....	Med. Col. Va., 1875.....	Prior to Board	Ramon D. Garcin.
Culpepper, James H.	Norfolk, Norfolk Co.....	Univ. of Pa., 1905.....	June, 1906.	Southgate Leigh.
Davis, Edward W...	Salem, Roanoke Co.....	Ky. School of Med., 1884.....	Prior to Board	L. G. Pedigo.
Eastham, Granville..	Rapidan, Culpeper Co.....	Memphis Hosp. Med. Col., 1904.....	June, 1905.	R. S. Martin.
Edmunds, Thos. W.	Danville, Pittsylvania Co.....	Col. Phy. and Surg., Balto., 1907.....	Dec., 1907.	J. C. Walton.
Epperson, Paul S...	Stovall, Halifax Co.....	Med. Col Va., 1907.....	June, 1907.	Geo. Ben Johnston.

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Ezekiel, Gerald A...	Richmond, Henrico Co.....	Med. Col. Va., 1908.....	June, 1908.	Mark W. Peyser.
Ferguson, Meade....	Richmond, Henrico Co.....	Univ. of Gœttengen, Ger., 1902.....	Not necessary	Ennion G. Williams.
Freeman, Allen W..	Richmond, Henrico Co.....	Johns Hopkins Univ., 1905.....	June, 1905.	Ennion G. Williams.
Fugate, Charles R..	Rye Cove, Scott Co.....	Med. Col. Va., 1907.....	June, 1907.	Geo. Ben Johnston.
Fultz, George S.....	Broadway, Rockingham Co.....	Med. Col. of Va., 1906.....	June, 1906.	W. A. Vaughan.
Gale, Jr., John S....	Ivor, Southampton Co.....	Univ. Col. Med., Richmond, Va., 1907.	Dec., 1907.	R. L. Ralford.
Gill, Thomas F.....	Marshall, Fauquier Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	R. S. Martin. Henry Frost.
Goodwin, Benj. C...	Buckner, Louisa Co.....	Med. Col. Va., 1865.....	1896.	G. W. Starke.
Greear, C. B.....	Honaker, Russell Co.....	Univ. State of Iowa, 1902.....	Dec., 1906.	Stuart McGuire.
Gwathmey, William.	Beulahville, King William Co....	Med. Col. Va., 1899.....	June, 1899.	R. D. Bates.
Harwood, Wm. E...	Petersburg, Dinwiddie Co.....	Med. Col. Va., 1873.....	Prior to Board	W. F. Drewry.
Healy, Merritt W....	Bena, Gloucester Co.....	Univ. Col. Med., Richmond, Va., 1906.	June, 1906.	A. L. Gray.
Higginbotham, J. N.	Richlands, Tazewell Co.....	Med. Col. Va., 1906.....	June, 1906.	J. T. Graham.
Hinchman, John D..	Richmond, Henrico Co.....	Med. Col. Va., 1907.....	Dec., 1907.	R. S. Martin.
Hoffman, R. McC...	Woodstock, Shenandoah Co.....	Univ. of Va., 1907.....	Dec., 1907.	Wm. F. Driver.
Hoge, Albert H.....	Hoge's Store, Giles Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	J. Allison Hodges.
Hopkins, William B.	Danville, Pittsylvania Co.....	Univ. Col. Med., Richmond, Va., 1907.	June, 1907.	A. L. Gray.
Hornbaker, F. W...	Occoquan, Prince William Co.....	Univ. Col. Med., Richmond, Va., 1900.	June, 1901.	W. J. Chewning. Landon B. Edwards.
Hough, Theodore...	University of Va., Albemarle Co..	Ph. D. of Johns Hopkins Univ., 1893.	Not necessary	R. H. Whitehead.
Howlett, Howard H.	Walkerton, King and Queen Co...	Geo. Wash. Univ., 1907.....	Dec., 1908.	R. S. Martin.
Hubbard, Jr., Jas. F.	Richmond, Henrico Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	R. S. Martin.
Jenkins, Harry E...	Norfolk, Norfolk Co.....	Univ. of Md., 1905.....	Recip. Md. '07.	Samuel E. Brown.
Johnson, Eddie L...	Peakesville, Bedford Co.....	Med. Col. Va., 1907.....	June, 1907.	W. A. Strother.
Jones, J. Frasia.....	Richmond, Henrico Co.....	Med. Col. Va., 1906.....	June, 1906.	J. Shelton Horsley.
Jones, Thomas D....	Manchester, Chesterfield Co.....	Med. Col. Va., 1906.....	June, 1906.	John W. Brodnax.
Kerr, George.....	Hampton, Elizabeth City Co.....	Univ. of Pa., 1864.....	Dec., 1907.	W. A. Plecker. Clarence Porter Jones. Stephen Harnsberger.
Knight, John E.....	Bristersburg, Fauquier Co.....	Med. Col. Va., 1908.....	June, 1908.	R. S. Martin.
Lake, Norman P....	Rectortown, Fauquier Co.....	Univ. of Va., 1908.....	June, 1908.	A. L. Gray.
Leake, Josiah.....	Peakes, Hanover Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	A. L. Gray.
Lewis, Charles H....	Richmond, Henrico Co.....	Univ. of Md., 1900.....	June, 1906.	Francis W. Upshur. W. A. Newman.
Lewis, J. Marye.....	Manassas, Prince William Co.....	Univ. of Va., 1903.....	June, 1903.	James L. Kent.
Lloyd, Jr., John J...	Lynchburg, Campbell Co.....	Univ. of Va., 1903.....	June, 1903.	R. W. Martin. Clarence Porter Jones.
Lynch, J. Mortimer..	Cheriton, Northampton Co.....	Geo. Wash. Univ., 1905.....	Dec., 1907.	Mark W. Peyser.

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NAME.	POST OFFICE AND COUNTY.	COLLEGE AND DATE OF GRADUATION.	PASSED MED. EXAM. BD. VA.	RECOMMENDED BY
Martin, Berkley H..	Rio Vista, Henrico Co.....	Med. Col. Va., 1908.....	June, 1908.	A. L. Gray.
Martin, Wm. Read..	Petersburg, Dinwiddie Co.....	Univ. Col. Med., Richmond, Va., 1907.	June, 1907.	W. F. Drewry. S. A. Hinton.
Mayes, D. C.....	Church Road, Dinwiddie Co.....	Univ. Col. Med., Richmond, Va., 1905.	Dec., 1905.	Stuart McGuire. A. L. Gray.
McCulloch, John H..	Richmond, Henrico Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	Geo. Ben Johnston.
McDowell, Jr., I. W.	Broadway, Rockingham Co.....	Med. Col. Va., 1908.....	June, 1908.	S. T. A. Kent.
McPhail, Donald....	Randolph, Charlotte Co.....	Med. Col. Va., 1878.....	Prior to Board	Stuart McGuire.
McWhorter, Jas. K..	Hampden Sidney, Pr. Edward Co.	Univ. of Ga., 1867.....	Prior to Board	W. F. Drewry. S. A. Hinton.
Moorman, John H...	Conicville, Shenandoah Co.....	Med. Col. Va., 1908.....	June, 1908.	R. S. Martin.
Neal, William O....	Tazewell, Tazewell Co.....	Univ. of Va., 1901.....	Dec., 1903.	C. T. St. Clair.
Noblin, Joseph A....	Roda, Wise Co.....	Hosp. Col. of Med., Ky., 1907.....	Dec., 1907.	James P. Edmonds.
Nowlin, J. Burton...	Buckingham, Buckingham Co.....	Col. Phy. and Surg., Balto., 1896.....	June, 1896.	J. H. Mitchell.
Page, Hugh Nelson..	Norfolk, Norfolk Co.....	Univ. of Va., 1905.....	June, 1908.	Edward E. Feild.
Parker, Rea.....	Petersburg, Dinwiddie Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	W. F. Drewry.
Patterson, William..	Staunton, Augusta Co.....	Univ. of Va., 1907.....	June, 1907.	J. M. Freed. M. J. Payne.
Payne, Jr., Robt. L..	Norfolk, Norfolk Co.....	Univ. of Pa., 1905.....	June, 1905.	Edward E. Feild.
Peery, Thomas Edw.	Pearisburg, Giles Co.....	Col. Phy. and Surg., Balto., 1895.....	May, 1895.	Francis T. Ridley.
Perrow, F. M.....	Lynchburg, Campbell Co.....	Univ. of Pa., 1905.....	Dec., 1906.	George J. Tompkins.
Pitt, Cullen S.....	Richmond, Henrico Co.....	Univ. Col. Med., Richmond, Va., 1905.	June, 1905.	A. L. Gray.
Powell, Richard A...	Clinchport, Scott Co.....	Univ. Col. Med., Richmond, Va., 1907.	June, 1907.	Landon B. Edwards.
Pretlow, Thomas J..	Newport News, Warwick Co.....	Med. Col. Va., 1906.....	June, 1906.	W. F. Drewry.
Raines, Thomas M..	Wakefield, Sussex Co.....	Med. Col. Va., 1907.....	Dec. 1907.	Geo. Ben Johnston.
Randolph, H. Ward..	Richmond, Henrico Co.....	Univ. Col. Med., Richmond, Va., 1902.	June, 1902.	A. L. Gray.
Rawls, David L.....	Suffolk, Nansemond Co.....	Univ. Col. Med., Richmond, Va., 1908.	June, 1908.	R. S. Martin.
Reynolds, Alexander.	Graham, Tazewell Co.....	Jeff. Med. Col., 1855.....	Prior to Board	C. T. St. Clair.
Richardson, A. S....	Hurley, Buchanan Co.....	Univ. Col. Med., Richmond, Va., 1900.	Aug., 1900.	E. P. Whited.
Richardson, Justus E.	Leatherwood, Henry Co.....	Hosp. Col. of Med., Ky., 1905.....	Dec., 1905.	Greer Baughman. Charles A. Robins.
Robey, William I...	Herndon, Fairfax Co.....	Columb. (now Geo. Wash.) Univ., 1902	Dec., 1907.	E. L. Detwiler. R. M. Slaughter.
Rogers, Richard O..	Richmond, Henrico Co.....	Med. Col. Va., 1907.....	Dec., 1907.	J. Shelton Horsley.
Schwab, Lester L...	Roanoke, Roanoke Co.....	Univ. Col. Med., Richmond, Va., 1900.	Dec., 1900.	W. H. Saunders.

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Scott, Charles M.....	Graham, Tazewell Co.....	Univ. Col. Med., Richmond, Va., 1901.	Dec.,	1901.	F. T. Ridley. Landon B. Edwards.
Scott, Sidney L.....	Fredericksburg, Spotsylvania Co..	Univ. of Va., 1901.....	Dec.,	1901.	J. Edward Tompkins.
Sears, C. Edward....	Salem, Roanoke Co.....	Univ. Col. Med., Richmond, Va., 1899.	June,	1899.	Landon B. Edwards.
Selby, John Hunter.	Warrenton, Fauquier Co.....	Univ. of Pa., 1907.....	Recip. Md. '07.		Stephen Harnsberger. S. W. Maphis.
Shacklette, Jas. R...	Stafford Store, Stafford Co.....	Univ. Col. Med., Richmond, Va., 1908.	June,	1908.	A. L. Gray. R. S. Martin.
Simmons, Frank G.	Richmond, Henrico Co.....	Vanderbilt Univ., 1890.....	June,	1908.	A. L. Gray.
Smith, Alick Thomas	Richmond, Henrico Co.....	Med. Col. Va., 1908.....	June,	1908.	Geo. Ben Johnston.
Smith, Jr., Thos. B..	Snaw's Store, Mecklenburg Co....	Univ. of Nashville, 1907.....	June,	1907.	A. L. Gray. B. L. Hillsman.
Smyth, H. Stuart...	Georgel, Wise Co.....	Med. Col. Va., 1894.....	April,	1894.	J. H. Hagy. T. M. Cherry.
Snead, Henry M....	Hillsboro, Loudoun Co.....	Univ. Col. Med., Richmond, Va., 1907.	June,	1907.	A. L. Gray.
Somerville, John W..	Norfolk, Norfolk Co.....	Univ. of Va., 1904.....	June,	1907.	Edward E. Feild.
Spencer, Hunter B..	Williamsburg, James City Co.....	Univ. Col. Med., Richmond, Va., 1907.	June,	1907.	A. L. Gray.
Sterrett, James Reid	Lexington, Rockbridge Co.....	Univ. Col. Med., Richmond, Va., 1908.	June,	1908.	A. L. Gray.
Stone, Harvey B....	University of Va., Albemarle Co...	Johns Hopkins Univ., 1906.....	Dec.,	1907.	R. H. Whitehead.
Swimley, Asbury C..	Winchester, Frederick Co.....	Univ. Col. Med., Richmond, Va., 1908.	June,	1908.	A. L. Gray.
Tennant, Charles C.	Charlottesville, Albemarle Co.....	Univ. of Va., 1904.....	Dec.,	1907.	J. S. Davis.
Thompson James H.	Boissevain, Tazewell Co.....	Univ. Col. Med., Richmond, Va., 1908.	June,	1908.	A. L. Gray.
Tilman, Julian E....	Rock Castle, Powhatan Co.....	Med. Col. Va., 1900.....	June,	1901.	R. D. Tucker.
Walker, Landon D..	Spout Spring, Appomattox Co.....	Med. Col. Va., 1908.....	June,	1908.	Geo. Ben Johnston.
Wall, Harry.....	Norfolk, Norfolk Co.....	Univ. of Va., 1904.....	Dec.,	1905.	Edward E. Feild.
Ward, Julian F.....	Winchester, Frederick Co.....	Univ. of Va., 1877.....	Prior to	Board	W. P. McGuire.
Watts, Stephen H...	University of Va., Albemarle Co...	Johns Hopkins Univ., 1901.....	Dec.,	1907.	R. H. Whitehead.
White, Harry F.....	Staunton, Augusta Co.....	Univ. Col. Med., Richmond, Va., 1908.	June,	1908.	A. L. Gray.
Wiggs, Leslie B.....	Richmond, Henrico Co.....	Med. Col. Va., 1907.....	Dec.,	1907.	M. P. Rucker.
Williams, Roy F....	Riner, Montgomery Co.....	Univ. Col. Med., Richmond, Va., 1905.	June,	1905.	W. W. Rangeley.
Wilson, William....	Byrdville, Pittsylvania Co.....	Med. Col. Va., 1907.....	June,	1907.	Geo. Ben Johnston.
Winston, John W...	Norfolk, Norfolk Co.....	Univ. of Va., 1903.....	June,	1903.	Edward E. Feild.
Woodson, George C.	Richmond, Henrico Co.....	Univ. Col. Med., Richmond, Va., 1907.	Dec.,	1907.	R. S. Martin.

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The following is an Alphabetically Arranged List of all Honorary Members, Fraternal Delegates, Invited Guests, and Active Members, registered as in attendance during some part of the Thirty-Ninth Annual Session:

FRATERNAL DELEGATES, INVITED GUESTS. ETC.

Drs. C. L. Johnson, 129 Main Street, Dallas, Tex.
Lewis D. Mason, 171 Joralmon Street, Brooklyn, N. Y.
Lewis C. Morris, Birmingham, Ala.
Presley M. Rixey, Washington, D. C.
D. A. Stanton, High Point, N. C.
J. Howell Way, Waynesville, N. C.
Tom A. Williams, Washington, D. C.

EX-PRESIDENTS AND HONORARY MEMBERS.

Drs. J. W. Ayler.
P. B. Barringer.
J. Wesley Bovee.
R. C. Bowles.
C. W. P. Brock.
T. D. Crothers.
W. C. Day.
Wm. B. DeGarmo.
Wm. F. Drewry.
Landon B. Edwards.
James H. Garlick.
J. R. Gildersleeve.
I. R. Godwin.
Lomax Gwathmey.
Geo. Tucker Harrison.
Lewis E. Harvie.
Robt. I. Hicks.
J. A. Hillsman.
R. G. Holloway.
Geo. Ben Johnston.
R. W. Martin.
Wm. P. McGuire.
Jacob Michaux.
E. J. Moseley.
W. L. Robinson.
George Ross.
A. R. Shands.
Isaac S. Stone.
R. T. Styli.
H. Cabell Tabb.
Wm. H. Taylor.
Christopher Tompkins.
John G. Trevilian.
J. N, Upshur.
George Tully Vaughan.
J. S. Wellford.

ACTIVE MEMBERS IN ATTENDANCE.

Drs. H. B. Anderson.
J. J. Anderson.
M. L. Anderson.
Wm. E. Anderson.
C. J. Andrews.
S. B. Angle.
J. N. Applewhite.
W. C. Archer.
T. D. Armistead.
T. E. Armstrong.
W. R. Arnold.
C. W. Astrop.
W. V. Atkins.
Marmaduke Atkinson.
C. M. Baggarly.
J. B. Bailey.
J. W. Baird.
T. M. Baird.
S. J. Baker.
H. L. Baptist.
G. E. Barksdale.
R. D. Bates.
Greer Baughman.
F. H. Beadles.
W. S. Beazley.
H. S. Belt.
W. W. Bennett.
Allen J. Black.
John Robin Blair.
J. Moncure Bland.
O. F. Blankingship.
C. A. Blanton.
J. C. Blanton.
Lyle S. Booker.
Lewis C. Bosher.
Robert S. Bosher, Jr.
S. C. Bowen.
E. T. Brady.
I. Keith Briggs.
W. S. Briggs.
J. Fulmer Bright.
Wm. L. Broaddus.
C. B. Brock.
J. W. Brodnax.

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B. D. Brooker.
F. M. Brooks.
A. G. Brown, Jr.
E. W. Brown.
G. W. Brown.
E. R. Browning.
M. R. Bruin.
O. C. Brunk.
R. C. Bryan.
Jos. M. Burke.
M. O. Burke.
Thos. G. Burke.
C. E. Busey.
W. W. S. Butler.
Manfred Call.
Hawes Campbell.
A. A. Cannaday.
W. P. Carr.
Cnas. V. Carrington.
B. L. Carter.
J. B. Catlett.
W. W. Chaffin.
T. M. Cherry.
W. J. Chewning.
C. A. Clemmer.
H. C. Cline.
E. C. Cobb.
R. H. Cobb.
W. H. Coffman.
Dan. J. Coleman.
W. J. Coleman.
John E. Coles.
Geo. L. Collins.
G. T. Collins.
J. E. Copeland.
H. L. Corbett.
A. G. Coumbe.
Lewis M. Cowardin.
Wm. J. Cowardin.
W. F. Creasy.
C. B. Crute.
W. L. Davenport.
J. P. Davidson.
E. W. Davis.
J. S. Davis.
W. A. Deas.
J. L. Deitrick.
H. M. DeJarnette.
J. S. DeJarnette.
J. B. DeShazo.
J. N. DeShazo.
Roderick Dew.
J. H. Deyerle.
B. L. Dillard.
W. F. Driver.
Fletcher Drummond.
Jas. H. Dunkley.
John Dunn.
W. W. Dunn.
H. R. Dupuy.
Jos. T. Dupuy.
Chas. M. Edwards.
E. E. Epperson.
A. D. Estill.
J. C. Everett.
G. A. Ezekiel.
Claybrook FauntleRoy.
E. E. Feild.
Meade Ferguson.
R. T. Ferguson.
A. T. Finch.
A. C. Fisher.
E. C. Fisher.
J. B. Fisher.
R. S. Fitzgerald.
W. C. Flagg.
H. O. Forbes.
W. B. Foster.
F. V. Fowlkes.
Allen W. Freeman.
S. S. Gale.
R. D. Garcin.
R. W. Garnett.
B. R. Gary.
Geo. W. Gay, Jr.
E. W. Gee.
J. M. Gibson.
Wm. J. Gills.
H. F. Givens.
R. T. Glassell.
Perkins Glover.
F. Gochnauer.
Wm. S. Gordon.
I. T. Gorsline.
J. M. Gouldin.
J. T. Graham.
C. R. Grandy.
H. C. Grant.
A. L. Gray.
L. S. Greene.
J. J. Gregory.
Joseph Grice.
St. G. T. Grinnan.
H. L. Gunn.
J. S. Haile.
F. W. Hains.
A. W. Hammond.
E. T. Hargrave.
J. M. Harman.
Stephen Harnsberger.
Virginius Harrison.
E. R. Hart.
J. O. Hart.
E. A. Hatton.
C. M. Hazen.
L. J. Head.
Thos. S. Hening.
James W. Henson.
H. H. Hill.
B. L. Hillsman.
J. D. Hinchman.
J. H. Hinchman.
S. A. Hinton.
E. L. Hobson, Jr.
J. A. Hodges.
A. G. Hoen.
A. H. Hoge.
M. D. Hoge, Jr.

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Lewis Holladay.
G. W. Holland.
E. A. Holmes.
A. Barnes Hooe.
E. Guy Hopkins.
W. B. Hopkins.
F. W. Hornbaker.
J. S. Horsley.
H. D. Howe.
Paul W. Howle.
H. H. Howlett.
W. P. Hoy.
J. F. Hubbard, Jr.
A. S. Hudson.
W. L. Hudson.
S. E. Hughes.
J. W. Hunter, Jr.
Lawrence Ingram.
W. J. Innes.
Jas. S. Irvin.
J. S. Irvine.
P. A. Irving.
L. F. James.
R. B. James.
R. B. Jarratt.
W. A. Jeffress.
Aaron Jeffrey.
C. P. Jones.
H. E. Jones.
J. B. Jones.
J. W. C. Jones.
T. D. Jones.
W. P. Jones.
Wm. R. Jones.
J. A. Keck.
R. P. Kelly.
P. A. Kennicott.
Jas. L. Kent.
S. T. A. Kent.
R. L. Kern.
W. W. Kerns.
D. M. Kipps.
D. A. Kuyk.
C. A. Labenburg.
G. Paul LaRoque.
S. P. Latane.
T. B. Latane.
R. R. Lee.
H. G. Leigh.
Southgate Leigh.
R. M. Lemon.
T. B. Leonard.
E. C. Levy.
H. H. Levy.
Duff G. Lewis.
H. W. Lewis.
J. N. Lewis.
M. B. Linkous.
P. D. Lipscomb.
Lucien Lofton.
J. G. Loving.
R. O. Lyell.
J. F. Lynch.
H. S. MacLean.
E. M. Magruder.
D. Meade Mann.
Herbert Mann.
John Mann.
S. W. Maphis.
J. H. Mapp.
C. D. Marchant.
W. P. Marks.
D. H. Marrow.
T. R. Marshall.
A. L. Martin.
B. H. Martin.
M. S. Martin.
H. N. Mason.
L. S. Mason.
C. W. Massie.
W. P. Mathews.
David McCaw.
W. K. McCoy.
F. C. McCue.
J. H. McCulloch.
N. E. McDannald.
W. A. McGowan.
Hugh McGuire.
H. H. McGuire.
Stuart McGuire.
W. E. McGuire.
W. P. McGuire.
W. T. McLemore.
R. T. McNair.
Donald McPhail.
W. D. Meeks.
C. W. Mercer.
W. F. Mercer.
W. F. Merchant.
William Meredith.
J. A. Meriweather.
T. D. Merrick.
S. N. Michaux.
B. A. Middleton.
C. M. Miller.
J. W. Miller.
R. W. Miller.
W. P. Miller.
Powhatan Moncure.
P. St. L. Moncure.
S. B. Moon.
S. B. Moore.
M. M. Moran.
E. J. Moseley, Jr.
S. H. Moseley.
Thos. W. Murrell.
Geo. T. Myers.
J. T. Neilson.
Hugh T. Nelson.
J. Garnett Nelson.
N. W. Nelson.
W. W. Nelson.
W. A. Newman.
McGuire Newton.
R. Angus Nichols.
C. B. Nuckolls.
M. E. Nuckols.
Herbert Old.

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St. J. Oppenhimer.
W. T. Oppenhimer.
Karl Osterhaus.
A. C. Palmer.
M. D. Parham.
J. R. Parker.
Jos. H. Parker.
T. A. Parker.
Wm. H. Parker.
Marshall J. Payne.
R. J. Payne.
R. L. Payne, Jr.
W. B. Payne.
L. G. Pedigo.
T. E. Peery.
W. L. Peple.
E. W. Perkins.
J. R. Perkins.
W. B. Pettit.
M. W. Peyser.
H. W. Phillips.
J. E. Phillips.
Cullen S. Pitt.
R. S. Powell.
Wm. C. Powell.
R. R. Preston.
T. G. Pretlow.
Thos. J. Pretlow.
L. T. Price.
C. W. Pritchett.
T. C. Quick.
R. L. Raiford.
R. T. Ramsey.
H. W. Randolph.
B. W. Rawles.
D. L. Rawls.
A. C. Ray.
F. M. Reade.
Jas. T. Redd.
Paul E. Redd.
J. G. Rennie.
W. H. Ribble, Jr.
B. A. Rice.
J. E. Richardson.
C. J. Riddick.
F. T. Ridley.
L. A. Robertson.
C. R. Robins.
W. B. Robinson.
R. O. Rogers.
Wm. R. Rogers.
W. C. Rosser.
J. P. Roy.
E. T. Rucker.
M. P. Rucker.
Kirkland Ruffin.
Emily C. Runyon.
W. D. Sale.
H. B. Sanford.
C. A. Saunders.
R. H. Scott.
H. L. Segar.
J. H. Selby.
R. L. Seward.
W. W. Seward.
J. M. Shackelford.
W. A. Shepherd.
Wm. Shippen.
F. G. Simmons.
J. W. Simmons.
R. H. Sims.
T. J. Sims.
J. F. Slade.
R. M. Slaughter.
S. G. Slaughter.
J. T. Sledge.
J. W. Sloan.
A. T. Smith.
G. L. Smith.
J. W. Smith.
T. B. Smith.
W. J. Smith.
Wm. M. Smith.
E. M. Sneed.
P. T. Southall.
B. D. Spalding.
H. B. Spencer.
T. J. Stanley.
G. W. Stark.
C. T. St. Clair.
W. H. St. Clair.
H. U. Stephenson.
Alvah Stone.
H. B. Stone.
G. A. Stover.
T. E. Stratton.
M. C. Sycle.
B. L. Taliafero.
D. D. Talley, Jr.
H. M. Taylor.
L. H. Taylor.
Philip Taylor.
C. J. Terrell.
E. H. Terrell.
F. L. Thurman.
J. E. Tilman.
J. A. Tipton.
E. L. Tompkins.
G. J. Tompkins.
J. E. Tompkins.
J. McC. Tompkins.
D. M. Trice.
H. H. Trout.
B. R. Tucker.
C. C. Tucker.
P. E. Tucker.
R. D. Tucker.
A. E. Turman.
D. O. Turner.
Wm. D. Turner.
A. L. Tynes.
F. W. Upshur.
C. M. Vaiden.
T. H. Valentine.
Douglas VanderHoof.
G. K. Vanderslice.
L. O. Vaughan.
E. E. Walker.

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John Walker.
L. D. Walker.
W. H. Wallace.
J. C. Walton.
J. E. Warinner.
S. H. Watts.
F. K. T. Warrick.
W. T. Warriner.
C. S. Webb.
A. L. Wellford.
Wm. J. West.
John R. Wheat.
H. F. White.
J. A. White.
Reid White.
R. H. Whitehead.
W. R. Whitman.
G. S. Wiley.
R. S. Wiley.
E. G. Williams.
J. W. Williams.
J. R. Williams.
W. L. Williams.
A. M. Willis.
F. D. Willis.
W. A. Wilson.
R. E. Wine.
J. H. Winfrey.
J. F. Winn.
Peter Winston.
R. M. Witten.
J. H. Womack.
A. D. Wood.
G. C. Woodson.
J. F. Woodward.
R. H. Woolling.
F. J. Wright.
J. A. Wright.
O. C. Wright.
R. H. Wright.
J. C. Wysor.

The President, DR. WILLIAM F. DREWRY, then proceeded to deliver the *Annual Address of the President*, announcing as his subject CO-RELATION OF THE PHYSICIAN AND THE LAYMAN. (See page 9.)

It was moved by DR. LANDON B. EDWARDS, seconded, and carried, that the address of the President be referred to the Executive Council.

The Secretary anounced that the Local Committee had provided a clerk to take charge of the Registration Book, the buttons and badges, and earnestly requested each member, fraternal delegate, guest, etc., in attendance to see that their names, postoffice addresses, etc., were properly recorded. Each member who registered would be furnished with a button unless he had received one at a previous meeting. If he had received a button at a previous meeting and lost it he could secure another for twenty-five cents.

The Secretary also announced that Mr. James H. Smith, a medical student, would act as stenographer for the session.

DR. LANDON B. EDWARDS moved that the privileges of the floor be accorded to all fraternal delegates, invited guests, etc., who may be in attendance. Carried.

DR. LANDON B. EDWARDS moved the election of the nominees of the several Districts, as *Members of the Executive Council*. Seconded and carried. The following is the list of the District Councilors elected:

First District—Dr. Clarence Porter Jones, Newport News.
Second District—Dr. E. E. Feild, Norfolk.
Third District—Dr. A. L. Gray, Richmond.
Fourth District—Dr. S. A. Hinton, Petersburg.
Fifth District—Dr. J. M. Shackelford, Martinsville.
Sixth District—Dr. George J. Tompkins, Lynchburg.
Seventh District—Dr. William P. McGuire, Winchester.
Eighth District—Dr. Tunis C. Quick, Falls Church.
Ninth District—Dr. J. T. Graham, Wytheville.
Tenth District—Dr. Marshall J. Payne, Staunton.

On call for election of *Councilors from the Society-at-large*, the following were nominated: Drs. Paulus A. Irving, Richmond; Stephen Harnsberger, Catlett; Charles R. Robins, Richmond; Kirkland Ruffin, Norfolk; S. S. Gale,

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Roanoke; James S. Irvin, Danville; M. M. Pearson, Bristol; Reid White, Lexington, and J. R. Gildersleeve, Richmond.

Drs. Stephen Harnsberger (132 votes), Kirkland Ruffin (128), Paulus A. Irving (118), J. R. Gildersleeve (115), and M. M. Pearson (114), receiving the highest number of votes in the order named, were declared elected as Executive Councilors from the Society-at-large.

(For convenience in reference a list of the entire *Executive Council* for 1908-'09 follows:

First District—Dr. Clarence Porter Jones, Newport News.
Second District—Dr. E. E. Feild, Norfolk.
Third District—Dr. A. L. Gray, Richmond.
Fourth District—Dr. S. A. Hinton, Petersburg.
Fifth District—Dr. J. M. Shackelford, Martinsville.
Sixth District—Dr. George J. Tompkins, Lynchburg.
Seventh District—Dr. William P. McGuire, Winchester.
Eighth District—Dr. Tunis C. Quick, Falls Church.
Ninth District—Dr. J. T. Graham, Wytheville.
Tenth District—Dr. Marshall J. Payne, Staunton.
Society-at-Large—Dr. Stephen Harnsberger, Catlett.
Dr. Kirkland Ruffin, Norfolk.
Dr. Paulus A. Irving, Richmond.
Dr. J. R. Gildersleeve, Richmond.
Dr. M. M. Pearson, Bristol.)

Dr. Paulus A. Irving, Chairman, presented the folowing as the

REPORT OF THE EXECUTIVE COMMITTEE.

Proceedings of the Several Meetings Held by the Executive Committee of the Medical Society of Virginia.

In response to the usual call, the Executive Committee assembled at the office of Dr. Landon B. Edwards, Richmond, Va., December 5, 1907, at 8:30 P. M. Present: Drs. P. A. Irving, Chairman; William F. Drewry, Floyd Gregory, M. D. Hoge, Jr., Greer Baughman, Clifton Miller, Landon B. Edwards.

Dr. Irving requested Dr. Drewry, as President of the Society, to preside over the meeting.

The object of this meeting was stated to be to decide on a subject or a Symposium for General Discussion at the meeting of the Society to be held in Richmond in 1908, to select leaders to open the discussion, to appoint the time and place for the next annual session, and consider any other matters pertaining to the interest and welfare of the Society.

It was moved and carried that the Secretary prepare a form for calling the meetings of the physicians in the different Congressional Districts for the purpose of nominating their respective representatives in the Executive Council.

It was stated that Mr. Fry, the manager of the Jefferson Hotel, had tendered the auditorium of said hotel to the Society, provided the Jefferson would be chosen as headquarters for the annual session. Drs. Irving and Baughman were appointed a sub-committee to arrange the details for said session, and report to an adjourned meeting of the Committee.

It was moved that the Richmond Academy of Medicine and Surgery be requested to appoint a Committee of Arrangements to act with the Executive Committee.

It was moved and carried that the District Councilors to be elected be especially requested to assist the Secretary in procuring new members for the Society.

It was the sense of the Committee that the papers for the next meeting be assigned definite hours on the program, and it was so ordered.

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Recurring to the question for a subject for the Symposium, the following subjects were suggested: *Tuberculosis, Diseases of the Stomach, Brain and Spinal Injuries, Anæsthetics, general and local.* On motion, the decision of this matter was referred to a special committee, consisting of Drs. Drewry, Hoge, Irving, Gregory, Miller and Baughman.

It was moved that the Secretary distribute from 500 to 1,000 reprints of the New Constitution and By-Laws, the cost not to exceed $20.

The adjourned meeting of the Executive Committee was held at the Central State Hospital, Petersburg, Va., December 30, 1907, at 3:30 P. M. Present: Drs. W. F. Drewry, Greer Baughman, Frank H. Hancock, Clifton M. Miller, Landon B. Edwards, Southgate Leigh and H. R. Dupuy.

After discussing the various subjects suggested, *Anæsthetics, general and local,* was chosen as the subject for the Symposium for the 1908 meeting of the Society.

On motion, the Committee adjourned to meet at the office of Dr. Landon B. Edwards, Richmond, Va., 8:30 P. M., January 8, 1908.

In accordance with adjournment, the meeting of the Executive Committee was held at the office of Dr. Edwards, Richmond, Va., January 8, 1908, at 8:30 P. M. Present: Drs. P. A. Irving, M. D. Hoge, C. M. Miller, William F. Drewry, L. B. Edwards, M. W. Peyser, Greer Baughman and J. F. Winn.

It was moved that the report of the Sub-Committee with reference to the selection of a subject for the Symposium for the next annual session be received, and that the subject, *"General and Local Anæsthetics,"* be adopted, with the following sub-divisions and leaders:

(*a*) *Physiological Action of Anæsthetics.* Dr. A. B. Greiner, Rural Retreat, *Leader.*

(*b*) *Administration of Anæsthetics in Medicine and Obstetrics.* Dr. H. Singleton Belt, South Boston, *Leader.*

(*c*) *Administration of Anæsthetics in Surgery.* Dr. Reid White, Lexington, *Leader.*

(*d*) *Indications for and Selection of Local Anæsthetics.* Dr. Lomax Gwathmey, Norfolk, (Honorary Member), *Leader.*

Tuesday, 8 P. M., October 20, 1908, was selected as the date for the next annual meeting of the Society, with headquarters at the Jefferson Hotel.

The President, Dr. Drewry, announced that the following distinguished physicians would be invited to attend and contribute to the proceedings of the session: Drs. Frederick Peterson, New York City; P. M. Rixey, Surgeon-General U. S. Navy, Washington, D. C., and Lewis Coleman Morris, Birmingham, Ala.

Dr. Drewry announced the following as the Judiciary Committee for 1907-08: Drs. J. R. Gildersleeve, Tazewell, Va. (Chairman); L. C. Bosher, Richmond, Va.; Lewis Holladay, Orange, Va.; T. O. Jones, Harrisonburg, Va.; O. C. Wright, Jarratt, Va.; J. W. Tankard, Lilian, Va.; M. J. Payne, Staunton, Va.

On motion, the Committee adjourned, subject to the call of the Chairman.

FEBRUARY 28, 1908.

Owing to the status of the Bill for the Repeal of the Special License Tax on Physicians, and a letter issued by the Chairman of the Legislative Committee with reference to the bill increasing the powers and appropriation to the State Board of Health, and a letter in reply thereto which had been prepared by certain members of the Society and profession, which it was thought would tend to defeat both bills, by request a joint meeting of the Executive and Legislative Committees was called and held at the office of Dr. Edwards February 8, 1908. Present: Executive Committee—Drs. Drewry, Edwards, Baughman, Fisher, Hoge, Irving, Miller and Peyser. Legislative Committee—Drs. DeShazo, Martin, Johnston, Hoge and Gordon. Other members present—Drs. Gray, Hazen, Newton, Williams and Dr. Gravatt, member of the Senate of Virginia.

Drs. Drewry and Peyser were, respectively, selected Chairman and Secretary of the conference.

After a full, free and frank discussion of the questions at issue, the Executive Committee passed the folowing resolutions:

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Resolved, 1. That it is deemed inexpedient at this time to press the bill for the repeal of the special license tax on physicians.

Resolved, 2. That in order to get the views of the entire membership of the Society in so live but important matter, that the Secretary issue a letter to each and every member, embodying the above resolution, with the statement that with the evidence before the conference of these two committees, it was the opinion of the Executive Committee that both bills were in jeopardy; that the bill for the repeal of the special license tax on physicians and the bill to increase the powers and appropriation to the State Board of Health both would not pass the Legislature; that the bill in behalf of the State Board of Health is of more vital interest to the State and the people generally, and that said bill, with the endorsement of the Medical Society of Virginia, would more likely become a law. This letter to be accompanied by a postal card for an immediate response in the form of a vote either for or against this proposition. The Executive and Legislative Committees to be guided by the result of this vote as to their action in the premises.

The response to this letter was largely in favor of continuing the canvass for the repeal of the special license tax, which was so ordered by the Committee, with the result that is known to you all, defeat of the measure in the House of Delegates of Virginia, 1908.

MEETING OF EXECUTIVE COMMITTEE MAY 28, 1908.

At a meeting of the Executive Committee held May 28, 1908, Dr. H. M. Nash, of Norfolk, after a continuous service of twenty-three years as a member of the Medical Examining Board of Virginia since its organization in 1885, tendered his resignation, which was reluctantly accepted. Dr. Herbert Old, of Norfolk, was nominated to the Governor to fill Dr. Nash's unexpired term. He has been duly commissioned, and is now actively in service as a member of said Board, and in the opinion of those who know him the mantle of his distinguished preceptor has fallen on worthy shoulders. On behalf of the Committee.

Respectfully, submitted,

PAULUS A. IRVING, *Chairman.*

Richmond, Va., October 20, 1908.

On motion, the Report of the Executive Committee was referred to the Executive Council.

DR. LANDON B. EDWARDS presented the following as the

ANNUAL REPORT OF THE SECRETARY.

RICHMOND, VA., *October* 20, 1908.

During the year I have been informed (chiefly through the newspapers) of the death of the following members: Drs. Aetius M. Adkins, Vicksville, Va.; John S. Apperson, Marion, Va.; J. William Austin, Bedford City, Va.; John L. Banks, Oak Forest, Va.; Randolph Barksdale, Petersburg, Va.; Robert L. Barrett, Louisa, Va.; William J. Best, Clearbrook, Va.; O. C. A. Bindewald, Portsmouth, Va.; George Corrie, Knotts Island, N. C.; David B. Drewry, Drewrysville, Va.; A. H. Fulton, Gibson Station, Va.; Lucien Hall, Yanceys Mill, Va.; Wilmer Hodgson, Roanoke, Va.; Daniel A. Langhorne, Lynchburg, Va.; C. Rosser Massey, Spotsylvania, Va.; George W. McNeil, Rocky Mount, Va.; Frederick F. Ninde, Colonial Beach, Va.; Ina Belle Reed, Zingara, Va.; Harry M. Rogers, Mt. Crawford, Va.; William G. Rogers, Charlottesville, Va.; Frederick Sale, Bedford City, Va.; Thomas W. Smith, Bethel Academy, Va.; William Keeling Wood, Berkley, Va. These deaths have been reported to the Chairman of the Necrological Committee.

Drs. E. W. Bitzer, Leesburg, Va.; R. H. Cunningham, New York, N. Y.; John R. Guerrant, Callaway, Va.; James O. Hart, Ashland, Va.; J. D. Kirk, Roanoke, Va.; Guy Miller, Watsonville, Cal.; J. W. R. Smith, Yale, Ky.; S. M.

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Stone, Tomsburg, W. Va.; William A. Wallace, Spartanburg, S. C., and Thomas H. Watts, Elbert, W. Va., have sent in their resignations, to take effect at this meeting. Dr. R. G. B. Broome, Poindexter, Va., says he resigned 1907, and Dr. J. N. Ellis, Atlanta, Ga., says he resigned in 1906. It is recommended that these resignations be accepted.

Letters addressed to the following members have been returned by the respective postmasters and marked "present address unknown": Drs. Henry H. Forline, Fredericksburg, Va., and John S. Pendleton, Marion, Va.

Dr. W. O. Pollard, whose name was dropped from the register because his address was "unknown," reports himself at Speers Ferry, Scott County, Va., and Dr. George Hobson Rose, whose letters were returned by the postmaster in Norfolk, reports that he is still in Norfolk, and these names have been replaced on the Register of Members in the Transactions for 1908.

Dr. R. H. Conan, who joined the Society in 1904, has just informed us that his name is Cowan instead of Conan. Dr. Samuel D. Price's name has been printed "Rice" in the Transactions since he joined in 1905, and we have just learned that his name was Price.

Dr. Charles W. Keel, of Orebank, Va., pays two dollars on account of dues, and asks that the balance be remitted, as his health is too bad to allow him to attend to his practice. We are informed that Dr. S. P. Preston, of Lynchburg, Va., is now in an asylum (insane), and we recommend that his dues be remitted.

Charges have been preferred against one of our members for unprofessional conduct, but, owing to a misunderstanding of the Constitution and By-Laws, were not forwarded to the Secretary in the time required by the law for consideration at this meeting. The charges have been duly turned over to the Judiciary Committee for attention, according to law.

One local Society has reported during the year that it is in affiliation with the Medical Society of Virginia—the Lee County Medical Society.

Duly called meetings have been held in each of the ten Congressional Districts of the State for the purpose of nominating a Councilor to represent the respective districts in the Executive Council of the Society.

The following are the nominations reported by the duly authorized Secretaries of these several meetings:

First District—Dr. Clarence Porter Jones, Newport News, Va.
Second District—Dr. E. E. Feild, Norfolk, Va.
Third District—Dr. A. L. Gray, Richmond, Va.
Fourth District—Dr. S. A. Hinton, Petersburg, Va.
Fifth District—Dr. J. M. Shackleford, Martinsville, Va.
Sixth District—Dr. George J. Tompkins, Lynchburg, Va.
Seventh District—Dr. W. P. McGuire, Winchester, Va.
Eighth District—Dr. T. C. Quick, Falls Church, Va.
Ninth District—Dr. J. T. Graham, Wytheville, Va.
Tenth District—Dr. M. J. Payne, Staunton, Va.

In the Second District it was found necessary to issue two calls before a meeting could be held to nominate a Councilor, as a large number of the members in that district said they did not receive due notification of the first meeting. Also in the Sixth District two calls were issued, as there was no quorum present in response to the first call.

The President, Dr. William F. Drewry, appointed the following doctors as a Committee on Medical Education to represent the Medical Society of Virginia in the Council on Medical Education of the American Medical Association: Drs. R. H. Whitehead, from the University of Virginia; Stuart McGuire, from the University College of Medicine, and C. M. Hazen, from the Medical College of Virginia.

Every member is earnestly requested to notify the Secretary just as soon as he changes his address, and also to notify the Secretary when a member in his vicinity dies. Almost without exception the deaths reports by the Secretary are secured from the newspapers, and as the Secretary has access to but few papers other than those published in Richmond, of course some names are missed.

LANDON B. EDWARDS.

On motion, the Secretary's Report was referred to the Executive Council.

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DR. R. M. SLAUGHTER, Theological Seminary, Va., submitted the following as the

TREASURER'S REPORT.

THEOLOGICAL SEMINARY, VA., *October* 17, 1908.

Mr. President and Fellows:

I have the honor of submitting the following report of the receipts and expenditures of my office for the year 1907-'08, now ended:

RECEIPTS.

Cash balance on hand at last report	$1,299 68
Receipts from all sources during the year 1907-'08	2,379 71
To be accounted for	$3,679 39

EXPENDITURES.

Amount paid Recording Secretary as salary	$ 600 00
Amount paid Recording Secretary for office expenses	656 91
Amount paid Dr. J. B. DeShazo, Chairman	275 00
Amount paid R. A. Moore, stenographer	60 00
Amount paid Whitehead Hoag Company for buttons	46 08
Amount paid President for telegrams sent	7 59
Amount paid Everett Waddey Company for Transactions	768 68
Amount paid for stationary for Treasurer	11 75
Amount paid for premium on Treasurer's bond	15 00
Amount paid for postage for Treasurer	45 00
Amount paid Treasurer as commission	233 50
	$2,719 51
Balance on hand	$ 959 88

This balance, I am sorry to say, is the smallest for several years. In spite of strenuous efforts on my part, aided by our Secretary, it has been impossible to collect a larger amount.

Respectfully submitted,

R. M. SLAUGHTER, M. D., *Treasurer.*

On motion the Treasurer's Report was referred to the Executive Council.

DR. J. B. DESHAZO, Ridgeway, Va., Chairman, presented the following as the

FINANCIAL STATEMENT OF LEGISLATIVE COMMITTEE.

Received from Society Treasurer	$275 00

DISBURSEMENTS.

Paid for stenographic work	$ 85 19
Paid for letter postage	24 55
Paid for December *Medical Legislator*	55 00
Paid for postage on the same	1 15
Paid for printing	4 50
Paid for telegrams	9 45
Paid for general expenses of the lobby	83 39
Paid the balance against the Committee of last year	11 77
Total amount of the above items	$275 00

J. BEVERLY DESHAZO, *Chairman.*

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DR. J. B. DESHAZO, Ridgeway, Va., Chairman, presented the following as the *Report of the Legislative Committee:*

Mr. President:

Since our last meeting the Legislative Committee has published the December issue of the *Medical Legislator*, and made the fight for the repeal of the license tax before the Legislature of Virginia.

Only one, the above bill, was urged before the legislators. It was called by the lawmakers the doctors' bill, but by the profession the Repeal Bill. It was introduced the first day of the session in the Senate by Senator Edward Echols, of Staunton, and a day or so later in the House by Dr. R. Powell, of Brunswick county. It was ably championed in the Senate by its patron and Senators William Hodges Mann, John R. Saunders, Don P. Halsey. The fight against it was dignified, fair and good natured. Only eleven votes were cast against it. Senator White was absent, but was paired for it, and the following voted for it: Senators Echols, Mann, Garrett, Thornton, Halsey, Rison, Lassiter, Gunter, Early, Folkes, Holt, Fletcher, Lesner, Chase, Sanders, Strother, Carter, Noel, Sale, King, Ward, Tucker, Gravatt, Lincoln and Harmon; consequently the bill was passed by this body. This was February 20, 1908.

The opponents of the Repeal Bill admitted for the first half of the legislative session that it would pass, but about this time the opposition seeing every other plan of procedure was futile, hit upon the plan of dividing the doctors for it, through the medium of the press, as well as the lobby. About ten per cent. of the doctors in and near Richmond only were led to believe that both the Repeal Bill and a Board of Health Bill, with adequate appropriation, could not pass the Legislature. This question came up before a conjoint meeting of the Legislative and Executive Committees February the 8th, in response to a call of the President of the Society. Your Committee, strongly aided by the Secretary of the Society, endeavored to correct this erroneous idea, which was only a play of politicians in the House of Delegates. The attempt to withdraw the Repeal Bill resulted as set forth in the letter sent out by the Executive Committee of the Medical Society of Virginia dated February 10th. Of course the work of your Committee at the Capitol was discontinued while the postal card vote was being taken. Here, now, was the opportunity of the opposition to organize against the Repeal Bill, which they did, and though more than eighty per cent. of the members of the Society objected to the withdrawal of the bill, as shown by the postal card vote, yet many Delegates seeing the division of doctors, though slight, and cornered by the Normal School fight, withheld their support reluctantly in favor of a Normal School. This was an unavoidable complication. Many good men did this promising to right the wrong done the bill in the future.

To enumerate the various dilatory tactics of the opposition in the House would fill a large volume, but, in spite of all, it came up for final action on the 4th of March. It was strongly advocated on the floor of the House by its patron, Captain Thomas S. West, of Bedford; Major Alden Bell, of Culpeper; Colonel James R. Caton, of Alexandria, and Hon. D. B. Evans, of Middlesex. There were ten Delegates paired for the measure, and the following forty-five voted for it: Hons. Bell, B. B. Bowman, Brown, Caton, Churchman, Clarke, John Orr Daniel, Dr. Daniel, William B. Dunn, Dr. T. M. Edwards, Evans, Featherstone, Deskin Green, M. M. Green, Griffith, Hall, Houston, Howle, Janney, Jennings, Jett, F. M. Love, Millard, Moncure, Oliver, E. W. Owens, Page, Pendleton, Powell, Read, Rew, Richardson, Robinson, Dr. George T. Snead, Stratton, Stuart, Stubbs, Dr. I. W. Surratt, Sylvester, Thrift, Walker, Weaver, West, Martin Williams.

The short legislative sessions of sixty days, now the law under the new Constitution of Virginia, makes it comparatively easy to defeat a bill, if it has not almost the unanimous support of the legislators—that is, if it is acted upon during the last half of the session. Every effort was made with the resources available to avoid this contingency. While we had sixty-seven committed to the Repeal Bill, the postal card vote delay, the Board of Health Bill division in the profession, and the Normal Sschool fight, that divided the interest of our friends in such a way that to vote for the Repeal Bill would have jeopardized their Normal School, together with the unfair statements and undignified, and almost vicious, fight on the floor of the House, defeated it by

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the narrow margin of six. Hardly a member of that body well posted denies that with either the Board of Health Bill or the Normal School question out of the way, the Repeal Bill would have become a law. It is with very great pleasure that the announcement is made here that both of these questions were settled for good, Harrisonburg and Fredericksburg each securing a Female Normal School, and the reorganization of the Board of Health was perfected.

Toward these physicians who were true to the traditions of, and were prompted by, those higher instincts of Virginia doctors, and were willing to and did sacrifice their own interests as embodied in the Repeal Bill for the benefit of the people's welfare as they thought was necessary for the Board of Health Bill, not one word of censure should be uttered, though their course was so disastrous to the Society's Bill, nor should the two doctors who lobbied against it be condemned, for charity ought to dictate that it was an error of the head and not the heart.

Nor should those members of the House of Delegates be too harshly criticised for withholding their votes temporarily from the Repeal Bill, in order that they might gain a Normal School for their constituents, for it was a case of not loving Cæsar less, but Rome more.

The members of this Society should always remember the work done for their bill in the Senate by Ex-Lieutenant-Governor Echols, the patron (in the Senate), and the speeches for it in that body by Senator William Hodges Mann, Don P. Halsey and Colonel John R. Sanders and J. C. Noel. Also reemmber the dignified work in the House of the patron, Dr. Powell, and Dr. Daniel, too, and the speeches on the floor of Hon. D. B. Evans, Major Bell, Captain Craig, Captain West and John R. Rew. Nor should either of those who stood the fire, the ire, the malicious assaults of the opposition on the floor of the House and cast their vote for the bill, for they belong to the highest type of Virginia legislators.

The appropriation to your Committee last session was not sufficient, but thanks to the doctors who came forward and subscribed, the actual financial loss was mostly made good, and no bills are to be paid now by the Society. It is just to record the names of the subscribers known in this connection. They are as follows: Doctors W. P. McGuire, Hugh McGuire, Southgate Leigh, W. S. Gordon, J. Shelton Horsley, R. C. Bryant, J. W. Dillard, J. C. Walton, J. P. Davidson, C. R. Robins, Hugh M. Taylor, P. A. Irving, P. B. Elliott, W. T. Henderson, J. T. Walker, for the Piedmont Medical Society; Herbert Old, for Norfolk doctors; Stuart McGuire, the largest subscriber; J. A. Rucker, for several; J. W. Wallace, for Alleghany county; O. C. Brunk, for Williamsburg; John Dunn, J. A. Abbitt, Christopher Tompkins, Lewis C. Bosher, George Ben Johnston, W. W. Chaffin, H. Stuart MacLean, Clarence Porter Jones, G. A. Stover, for several, South Boston; H. C. Beckett, Walter J. Adams, John C. Wysor, for Clifton Forge physicians; Edward McGuire, Nelson W. West, R. M. Slaughter, B. B. Tucker, G. W. Cooke, Samuel Lile, for several of Lynchburg; Junius F. Lynch, C. D. Barksdale, S. T. A. Kent, F. E. McDonald, H. L. Gunn, C. M. Edwards, the Richmond Academy of Medicine, the Southside Medical Society, the Shenandoah Medical Society, the Surry Medical Society, the Church Hill Medical Society, of Richmond, and the Piedmont Medical Society, each subscribing a small amount. Dr. Landon B. Edwards did the most of all in helping this Committee, as everybody well knows.

Seeing the consequences of a division of the profession, though so slight as ten per cent. of one city, it behooves every member of the Society to abide by the will of the majority and stand together, or it is impossible to secure desired legislation, it matters not what the intrinsic merits of a queston are. Let us urge each one to profit by, but forget, the unpleasantries of the past, and be ready to answer the call to battle for the next engagement, and respond with the promptness and will that brooks no defeat.

Thanks, a thousand times, are due those friends who have contradicted the erroneous impressions scattered by a few false friends in the House of Delegates promulgated to excuse their own shortcomings. To those who differ with the views and methods practiced by the chairman of this committee, we admit that they had grounds for real complaint as they see it, but were it proper to give a perfect picture of the thorny path traversed, with the limited resources at command, they would condone the errors committed. In retiring

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from the committee in accordance with the term of office, we regret that success, while so near, was not gained, but the righteousness of the cause is more and more apparent, and with the same Senate, already our friend, we bespeak for the new committee a promise that with the united profession now so schooled in hard experience, that the odious license tax will be abolished by the next Legislature of Virginia, and justice will be given our noble profession.

Respectfully submitted,

J. B. DEShazo, *Chairman.*

On motion, the Report of the Legislative Committee was referred to the Executive Council.

Dr. R. M. Slaughter, Theological Seminary, moved a vote of thanks to Dr. DeShazo and the other members of the Legislative Committee for their arduous labors in connection with the repeal of the license tax bill. Carried.

The following *Report of the Committee on Medical Education* was presented by the Chairman, Dr. R. H. Whitehead, and referred to the Executive Council:

The Committee on Medical Education begs leave to submit the following report:

This Committee was appointed at the request af the Council on Medical Education of the American Medical Association by Dr. P. B. Barringer during his term as President, and reappointed by President Drewry. A preliminary meeting was held in Richmond in March, 1907, and this was followed by a joint session with a similar Committee from the Board of Medical Examiners in Lynchburg in June, 1907. The chief topic of discussion was the desirability and the feasibility of so amending the Medical Practice Act of Virginia as to enable the Board to raise its standard in harmony with the movement now in progress over the entire country.

As a result of their deliberations the two Committees united in a joint recommendation to the Board of Examiners, that the medical practice act should be amended by inserting the word reputable before the words "medical college," by means of which change the Board would be able to decline to examine the graduates of any except "reputable" colleges, the word reputable being used in a pedagogic rather than moral sense.

The considerations which moved the Committees to make this recommendation are, briefly, as follows:

1. In response to a widespread demand a certain reasonable minimum standard of medical education has been adopted by a large number of State Examining Boards. In some cases this minimum standard is defined in detail and incorporated in the medical practice acts of the States in question, and is thus fixed by law; in other cases the standard is fixed by the Boards under the authority invested in them by law. As the result of the adoption of this standard, graduates of colleges which fall below it are not permitted to take the examination for license in such States. Again, the recent inspection of the medical schools of the country conducted under the auspices of the American Medical Association has revealed a considerable number of colleges which, even under the most liberal system of grading, must be regarded as disreputable in the pedagogic sense. It is clear, therefore, that States like Virginia, whose laws require the Examining Boards to examine every graduate who may appear before them, will inevitably become a dumping ground for the graduates of low grade schools, unless they take measures to protect themselves.

2. The Virginia medical schools have increased their entrance requirements and are raising their standards in other respects. They feel that the State should encourage and support them at least to the extent of declining to recognize diplomas issued by schools of lower grade.

3. Of the two methods in vogue—the one fixing the standard by legislative enactment, and the other giving the Board power to make a standard by requiring applicants for license to be graduates of "reputable" schools—the latter was preferred, because (1) it was believed that it would be easier to convince legislators of its desirability; and (2) because of the flexibility of

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the latter plan, which makes it possible for a Board to change its standard as conditions may warrant without the necessity of again appearing before the Legislature.

The Board of Examiners adopted this recommendation, and went on record in their minutes as favoring the minimum standard recently adopted by the American Medical Association. Through an unfortunate misunderstanding, however, the attempt to obtain from the last Legislature the amendment mentioned above was not made until too late in the session, and without any concerted action; your Committee thought that the Board of Examiners was attending to the matter, while the Board thought tha the Committee would do so. As a result, the bill, prepared by Dr. Stuart McGuire, was buried in the Committee to which it was referred. We shall hope to secure this amendment from the next Legislature. Respectfully submitted,

R. H. WHITEHEAD,
STUART MCGUIRE,
CHARLES M. HAZEN,
Committee on Medical Education.

On motion, the Report of the Committee on Medical Education was referred to the Executive Council.

DR. WILLIAM E. ANDERSON, Farmville, presented the following as the *Report of the Delegates to the House of Delegates of the American Medical Association:*

FARMVILLE, VA., *October* 19, 1908.

All three of your Delegates elected attended the meeting of the American Medical Association. The attendance at Chicago was larger than at any previous meeting. A vast amount of interesting scientific work was done by the various sections. The House of Delegates made considerable progress along the lines of medical education, educating the public in matters pertaining to health and in medical organization. We believe that we should keep in closer touch with the A. M. A.

W. E. ANDERSON,
STUART MCGUIRE,
J. SHELTON HORSLEY.

On motion, the Report of the Delegates to the House of Delegates of the American Medical Association was referred to the Executive Council.

DR. RAMON D. GARCIN presented the following resolution, which was referred to the Executive Council:

Resolved, That a committee of three, to be known as the Library Committee, be appointed, said committee to make such arrangements as may be necessary with the State Librarian, to inaugurate a system of loaning (under such rules and regulations as may be deemed proper) standard medical works to the members of this Society, and to render such reference service as may be required.

Resolved, further, That the sum of one hundred and fifty ($150) be appropriated the first year to make this effective.

DR. WILLIAM E. ANDERSON, Farmville, Chairman, presented the following as the *Report of the Committee Appointed by the Sixth International Congress on Tuberculosis*, to present suitable resolutions to the Medical Society of Virginia regarding the prevention and cure of tuberculosis in Virginia:

During the session of the Sixth International Congress on Tuberculosis recently held in Washington, D. C., the delegates and others from Virginia interested in the work held a meeting and formed a "Provisional organization for the prevention and cure of Tuberculosis in Virginia."

We, the undersigned committee, were appointed by that organization to present suitable resolutions to the Medical Society of Virginia at this session. We beg to submit the following:

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Whereas it is conservatively estimated that tuberculosis is causing the death of 20,000 people annually in this State and a monetary loss from illness and incapacity hard to estimate; and

Whereas nearly all the States of the Union are far ahead of Virginia in their efforts to prevent, control and cure tuberculosis; and

Whereas we believe there is no greater opportunity for us as a profession, or for Virginia as a State, to render valuable service to the human race than in this field; therefore, be it

Resolved, first, That the Medical Society of Virginia, while expressing appreciation of the action of our State Legislature at its last session in appropriating funds for the more efficient work of the State Board of Health, we nevertheless most earnestly petition the next Legislature of Virginia to consider well what may be accomplished, and to make a liberal appropriation of funds for this work; and

Second, That the Medical Society of Virginia hereby promises to lend its full strength and support, and the individual members their earnest efforts, to aid in every way possible the fight now being made in our State, in our country, and throughout the civilized world against tuberculosis.

Third, That we also appeal to every physician in Virginia, to all its charitable and benevolent institutions and organizations, and to every citizen within its borders, to aid by their earnest effort, in every way possible, the work now being done in our State, in our country, and throughout the civilized world towards stamping out tuberculosis.

We believe that if the State, the medical profession, cities, towns, counties and individuals will do well their respective parts in the work, prompt will be the results and brilliant success will crown our organized efforts.

Fourth, That this Society appoint a committee to inaugurate an association for the prevention, control and cure of tuberculosis. The said association not to be limited in its membership to the medical profession.

Respectfully submitted,

WILLIAM ANDERSON, *Chairman.*
W. H. RIBBLE, JR.,
STEPHEN HARNSBERGER,
TRUMAN A. PARKER,
S. T. A. KENT,
Committee.

On motion, the Report of the Committee on Tuberculosis was referred to the Executive Council.

On motion, the Society adjourned till 10 A. M. tomorrow.

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SECOND DAY—WEDNESDAY—MORNING.

RICHMOND, VA., *October* 21, 1908.

The Society was called to order by the President at 10:30 A. M.

On motion, the reading of minutes of the meeting last night was omitted.

The order of business called for the presentation of *Clinical Reports—not to exceed five minutes each.*

Reports of Clinical Cases were presented by Drs. J. E. PHILLIPS, J. C. WALTON, CHARLES S. WEBB, A. L. TYNES, L. G. PEDIGO, MARK W. PEYSER and J. E. COPLAND. (See pages 18-21.)

The hour for the special order of the day—11 A. M.—having arrived, the *Symposium on Anæsthetics and Anæsthesia* was called.

The papers of the Symposium were read in the following order:

Physiological Action of Anæsthetics, Dr. A. B. GREINER (paper read by Dr. J. E. Warinner), Rural Retreat, Leader. (Page 21.).

Administration of Anæsthetics in Medicine and Obstetrics, DR. H. SINGLETON BELT, South Boston, Leader. (Page 24.)

Administration of Aæsthetics in Surgery, DR. REID WHITE, Lexington, Leader. (Page 29.)

Indications for and Selection of Local Anæsthetics, Honorary Member DR. LOMAX GWATHMEY, Leader. (Page 33.)

General Discussion of the papers read was announced to be open. Remarks were made by Dr. Virginius Harrison, Richmond (page 38); Dr. Charles S. Webb, Bowling Green (page 39); Dr. H. D. Howe, Hampton (page 39); Dr. Stephen Harnsberger, Catlett (page 39); Dr. William Gwathmey, Beulahville (page 40); and Lomax Gwathmey, Norfolk (page 41).

Reading and Discussion of Papers in the order as announced in the Official Program for this session were now called for.

In the absence of DR. J. HERBERT CLAIBORNE, of New York, N. Y., his paper on *Interstitial Keratitis in Acquired Syphilis*, was read by title and referred to the Committee on Publications. (Page 42.)

DR. J. A. WHITE, Richmond, read a paper on *Remarks on Direct Inspection of the Windpipe and Esophagus* (page 47). (Apractical demonstration on dogs was made by Dr. White, assisted by Dr. John Dunn, at the Virginia Hospital later).

DR. MARK W. PEYSER, Richmond, read a paper on *The Minin Light* (page 50).

DR. W. H. WALLACE, Brooklyn, N. Y., read a paper on *Physiological Action of Electrical Currents—A Brief For Their Intelligent Uses in Therapeutics* (page 52).

Discussed by Drs. Mark W. Peyser, Richmond (page 55), and W. H. Wallace, Brooklyn (page 55).

DR. A. L. GRAY, Richmond, read a paper on the *Value of X-Rays in Chest Diagnosis* (page 55).

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DR. THOMAS W. MURRELL, Richmond, read a paper on *The X-Rays as a Treatment of Skin Diseases* (page 57).

The two papers above were discussed conjointly by Drs. James W. Hunter, Norfolk (page 59); Mark W. Peyser (page 59); J. Garneett Nelson, Richmond (page 59); Douglas Vanderhoof, Richmond (page 60); Truman A. Parker, Richmond (page 60); Hugh M. Taylor, Richmond (page 61); C. M. Hazen, Bon Air (page 61); W. H. Wallace, Brooklyn, N. Y. (page 61); A. L. Gray, Richmond (page 61); and Thomas W. Murrell, Richmond (page 61).

On motion, at 1:45 P. M., the Society adjourned until 3 P. M.

SECOND DAY—WEDNESDAY—AFTERNOON.

About 3:30 P. M. the President called the Society to order.

Reading of papers being the continued order of business, a paper by DR. EDWARD D. STARKE, Norfolk, on *Frequency of Absence of Skin Lesions in Syphilis*, was read by title and referred to the Committee on Publications (page 62).

DR. CHARLES J. ANDREWS, Norfolk, read a paper on *Herpes Gestationis—Report of a Case* (page 63).

Discussed by Drs. Herbert Old, Norfolk (page 65), and Charles J. Andrews, Norfolk (page 65).

Invited Guest, DR. FREDERICK PETERSON, New York, N. Y., read a paper on *Talk on Morbid Psychology* (page 65).

Discussed by Dr. J. Allison Hodges, Richmond (page 76).

DR. J. S. DEJARNETTE, Staunton, read a paper on *Inebriates and What to Do With Them* (page 76).

Honorary Member, DR. T. D. CROTHERS, Hartford, Conn, read a paper on *The Medical Side of the Alcoholic Problem* (page 79).

Discussed by Drs. Virginius Harrison, Richmond (page 84); J. N. Upshur, Richmond (page 85); James W. Hunter, Norfolk (page 85); George Ross, Richmond (page 85); Tom A. Williams, Washington, D. C. (page (86); W. J. Innes, Brookneal (page 86); T. M. Cherry, Norton (page 86); and T. D. Crothers, Hartford, Conn. (page 87).

DR. BEVERLEY R. TUCKER, Richmond, read a paper on *Diagnosis of Hysteria* (page 87).

Discussed by Drs. Tom A. Williams, Washington, D. C. (page 93); C. M. Hazen, Bon Air (page 93); and Beverley R. Tucker, Richmond (page 94).

DR. LANDON B. EDWARDS moved that the question of dividing into two sections, medical and surgical, be referred to the Executive Council, to begin with the session Thursday morning. Carried.

On motion, the Society adjourned till 10 A. M. tomorrow.

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THIRD DAY—THURSDAY—MORNING.

RICHMOND, VA., *October* 22, 1908.

The Society was called to order about 10:30 A. M., the President in the Chair.

Reading of minutes of yesterday's meeting was, on motion, omitted.

DRS. R. M. WILEY and J. C. DARDEN, of Salem, being absent, their paper on *Series of Cases of Acute Polio-Myelitis* was read by title and referred to the Committee on Publications (page 94).

DR. H. COLLES GRANT, Waynesboro, read a paper on *Case of Tetanus* (page 98).

Invited Guest, DR. P. M. RIXEY, Surgeon-General United States Navy, Washington, D. C., read a paper on *The Medical Profession as Represented in the United States Navy* (page 100).

DR. GEORGE N. COLLINS, United States Marine Hospital Service, Fortress Monroe, read a paper on *Some Insect-Borne Diseases* (page 105).
Discussed by Dr. P. B. Barringer, Blacksburg (page 109).

DR. ST. GEORGE T. GRINNAN, *Richmond*, read a paper on *Typhoid Bacilli Carriers* (page 110).
Discussed by John Stagie Davis, University (page 111).

Papers by DRS. A. J. BURKHOLDER, Mount Sidney, on *Typhoid Fever* (page 112), and R. H. GARTHRIGHT, Vinton, were read by title and referred to the Committee on Publications (page 114).

DR. CHARLES T. ST. CLAIR, Tazewell, read a paper on *Some Phases of Tuberculosis Important to the Public* (page 116).
Discussed by Drs. A. L. Tynes, Staunton (page 120), and Charles S. Webb, Bowling Green (page 120).

DR. DOUGLAS VANDERHOOF, Richmond, read a paper on *Rational Treatment of Indigestion* (page 120).
Discussed by Drs. Tom A. Williams, Washington, D. C. (page 125); John Stagie Davis, University (page 125); I. S. Stone, Washington, D. C. (page 125); L. G. Pedigo, Roanoke (page 126); C. M. Hazen, Bon Air (page 126); and Douglas Vanderhoof, Richmond (page 127).

DR. ALEX. G. BROWN, Richmond, read a paper on *Present Day View of Arteriosclerosis, and Its Significance* (page 127).

DR. J. S. HARRISON, Elm City, N. C., being absent, his paper on *External Uses of Magnesium Sulphate, with a Brief Report of Cases*, was read by title and referred to the Committee on Publications (page 131).

DR. STEPHEN HARNSBERGER, Catlett, read a paper on *Potassium Bicarbonate and Hyoscine Hydrobomide in the Treatment on Influenza* (page 132).

DR. HERMAN E. JONES, Roanoke, read a paper on *Is Mercury a Specific in Infectious and Contagious Diseases, as Well as in Syphilis?* (page 134).
Discussed by Drs. M. C. Sycle, Richmond (page 138); L. G. Pedigo, Roanoke (page 138); and Herman E. Jones, Roanoke (page 139).

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DR. J. C. WALTON, Richmond, read a paper on *Hydrotherapy—Report of Cases* (page 139).

Discussed by Drs. C. M. Hazen, Bon Air (page 144); J. N. Upshur, Richmond (page 145); Tom A. Williams, Washington, D. C. (page 146); Jacob Michaux, Richmond (page 147); E. M. Magruder, Charlottesville (page 147); and J. C. Walton, Richmond (page 147).

On motion, the Society adjourned at 2 P. M. for dinner, to meet again at 3:30 P. M.

THIRD DAY—THURSDAY—AFTERNOON.

The Society was called to order at 3:30 P. M. by the President.

DR. WILLIAM P. MCGUIRE, Winchester, Chairman, presented the following as the *Report of the Executive Council*, which Report was read by the Clerk of the Council, Dr. A. L. Gray.

REPORT OF EXECUTIVE COUNCIL.

To the President and Members of the Medical Society of Virginia:

The Executive Council beg leave to make the following report:

A preliminary meeting was called at 9 A. M. October the 21st. Dr. Paulus A. Irving was elected Temporary Chairman, and Dr. A. L. Gray Temporary Clerk. The Chairman announced the following committees for the facilitation of business at the annual meeting:

1st. Permanent Organization.

2d. Committee on President's Address and Secretary's Report.

3d. Committee on Treasurer's Account and Legislative Committee's Report.

4th. Committee on Resolutions and Report of Delegates to American Medical Association.

These were ordered to consider their several matters and report back to the regular annual meeting at 7:30 P. M.

At the regular annual meeting the Committee on Permanent Organization recommended the nomination of Dr. W. P. McGuire, of Winchester, as Permanent Chairman, and Dr. A. L. Gray, of Richmond, as Permanent Clerk, who were unanimously elected. The Committee proceeded to business and at once went into the nomination of officers, standing committees and delegates to the American Medical Association.

We beg to nominate the following as the officers of this Society for the ensuing year:

For President—Dr. Stuart McGuire, of Richmond.

For First Vice-President—Dr. O. C. Wright, of Jarratt.

For Second Vice-President—Dr. E. T. Brady, Abingdon.

For Third Vice-President—Dr. Reid White, of Lexington.

For Secretary—Dr. Landon B. Edwards, of Richmond.

For Treasurer—Dr. R. M. Slaughter, of Theological Seminary.

Judiciary Committee—Dr. Lewis C. Bosher, Richmond, Chairman; Dr. J. S. Irvine, Evington; Dr. C. T. St. Clair, Tazewell; Dr. George B. Fadeley, Falls Church; Dr. J. Staige Davis, University; Dr. Lewis Holladay, Orange; Dr. George J. Williams, Newport News.

Membership Committee—Dr. W. D. Turner, Smithfield, Chairman; Dr. M. W. Peyser, Richmond; Dr. W. F. Driver, New Market; Dr. J. Bolling Jones, Roanoke; Dr. W. W. Chaffin, Pulaski.

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Legislative Committee—*Dr. George A. Stover, South Boston, Chairman; Dr. H. Stuart MacLean, Richmond; Dr. J. Wilton Hope, Hampton; Dr. J. H. Ayres, Accomac; Dr. W. B. Payne, Covington.

For House of Delegates, A. M. A.—Dr. W. E. Anderson, Farmville; Dr. J. Shelton Horsley, Richmond; †Dr. T. C. Firebaugh, Harrisonburg.

Your Council met again at 9 A. M., 22d.

The Council unanimously recommends, first, that the salary of the Secretary be increased to one thousand dollars per year.

Second. That the Society be divided into two sections—viz.: Medical and Surgical.

Third. That the Society meetings be held in cities of not less than twenty-five thousand population.

Fourth. That Roanoke be selected as the meeting place for the next annual session, the time of meeting to be determined by the President, the Secretary and the local Committee of Arrangements.

Fifth. That the Transactions be published as formerly, with the exception that the Biographical Register shall be limited to six lines after each name.

Sixth. That the report of the Recording Secretary be adopted as a whole. (Page 251).

Seventh. We find the Treasurer's report to be satisfactory and correct. (Page 253).

Eighth. That the report of the Executive Committee be received and adopted. (Page 249).

Ninth. The commendation of the Society for the Legislative Committee for its efforts to obtain the repeal of the license tax on physicians in Virginia. We have every reason to believe the Committee did its best. We find the money appropriated for the purpose spent judiciously, all bills paid, and receipts exhibited therefor.

That the Legislative Committee to be elected at this session of the Society should be instructed to organize at once, and begin the preliminary work towards obtaining the repeal of the license tax on physicians in Virginia, at the next session of the General Assembly, and that a liberal appropriation be made for the use of defraying the expense incurred by this committee.

Tenth. That, with reference to the resolution (page 257) offered by Dr. R. D. Garcin for the establishment of a medical library in connection with the State Library, while the idea is a good one, we do not consider it feasible at present.

Eleventh. That the report of delegates to the American Medical Association be received and adopted. (Page 257).

Twelfth. That we heartily endorse the resolutions offered by the "Provisional Organization for the Prevention and Cure of Tuberculosis in Virginia," and that this Society appoint a committee to inaugurate an association for the prevention, control and cure of tuberculosis, and that the membership of the association be not limited to the medical profession. (Page 257).

Thirteenth. That the report of the Committee on Medical Education be adopted, and this committee be continued.¶ (Page 256).

Fourteenth. That the subject for discussion at the next annual meeting be Pneumonia: (a) in adults, Dr. John Rennie, Petersburg, Leader; (b) in children, Dr. W. E. Anderson, Farmville, Leader; (c) treatment, Dr. W. A. Plecker, Hampton, Leader.

Fifteenth. That the proceedings of the Executive Council shall be in no sense secret from the Society, that any member of the Society may be present at any of its sessions.

W. P. McGuire, *Chairman.*
A. L. Gray, *Clerk.*

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*Dr. George A. Stover was appointed Chairman of the Legislative Committee on the declination of Dr. Charles R. Grandy to serve in this position.

†Dr. J. L. Kent, not having been a member of the A. M. A. for the two years previous to his election as a Delegate to the House of Delegates of the of the A. M. A., was declared by that Association ineligible, and Dr. T. C. Firebaugh was duly appointed in his stead.

¶This Committee consisted of Drs. R. H. Whitehead, of University, Chairman; Stuart McGuire, Richmond, and Charles M. Hazen, Bon Air. But as Dr. McGuire was later elected President of the Society, Dr. William S. Gordon, Richmond, was appointed in his stead.

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DR. L. E. HARVIE moved that the Report of the Executive Council be adopted. Seconded by Dr. Rawley Martin. Carried.

Reading of papers being announced as the next order of business, DR. J. ALLISON HODGES, Richmond, read his paper on *Inter-Dependence of Physicians and Surgeons* (page 148).

Discussed by Drs. Hugh M. Taylor, Richmond (page 150); George Ben Johnston, Richmond (page 151); Edward McGuire, Richmond (page 151); and J. Allison Hodges, Richmond (page 152).

DR. JOHN W. BRODNAX, Manchester, read a paper on *Some Remarks on Coroners and Their Duties* (page 152).

Discussed by Dr. J. Newton Lewis, Roanoke (page 152).

Honorary Member, DR. J. WESLEY BOVEE, Washington, D. C., read a paper on *The Relation Between the General Practitioner of Medicine and the Specialist* (page 155).

DR. CHARLES R. ROBINS, Richmond, read a paper on *Necessity for Diagnosis as a Primary Step to Gynecological Operations* (page 157).

Discussed by Dr. J. Newton Lewis, Roanoke (page 154).

DR. HERBERT OLD, Norfolk, being absent, his paper on *Observations on One Hundred Cases of Obstetrics in Private Practice* was read by title and referred to the Committee on Publications (page 159).

DR. WILLIAM E. ANDERSON, Farmville, read a paper on *Some Obstetrical Experiences* (page 162).

Discussed by Drs. John F. Winn, Richmond (page 167); J. N. Upshur, Richmond (page 167); George Ross, Richmond (page 168); Lewis Holladay, Orange (page 168); George Tucker Harrison, New York, N. Y. (page 168); J. E. Copeland, Round Hill (page 169); W. F. Creasy, Newport News (page 169); and William E. Anderson, Farmville (page 170).

On motion, the Society adjourned till 10 A. M. to-morrow.

FOURTH DAY—FRIDAY—MORNING.

RICHMOND, *October* 23, 1908.

The Society was called to order at 10:30 A. M. by the President.

Reading of minutes of yesterday's meeting was, on motion, omitted.

Reading of papers being the order of business, in the absence of Dr. E. R. HART, Suffolk, his paper on *Petrified Fetus of Three Years' Standing Removed from the Abdominal Cavity*, and DR. E. T. HARGRAVE, Norfolk, his paper on *Ectopic Pregnancy—the Late Operation*, were read by title and referred to the Committee on Publications. (See pages 170 and 172, respectively.)

DR. T. C. QUICK, Falls Church, on behalf of the Executive Council, offered the following amendment to the Report the Committee made on Thursday:

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Resolved, That in the future the Transactions of the Medical Society of Virginia contain the President's address, the Proceedings of the Society, the title of each paper read, with an abstract, not to exceed one page of the Transactions, prepared by the author, the Constitution and By-Laws, the names and addresses of members according to Congressional Districts; also, the matter on pages 373 to 379, inclusive, of the Transactions of 1907, and that the Biographical Register be limited to six lines to each name.

On motion, this amendment was laid on the table until the next meeting.

Invited Guest, DR. LEWIS C. MORRIS, Birmingham, Ala., read a paper on *Cesarean Section* (page 174).

Discussed by Drs. Edward McGuire, Richmond (page 179); George Tucker Harrison, New York, N. Y. (page 180); J. Wesley Bovee, Washington, D. C. (page 181); John F. Winn, Richmond (page 181), and Lewis C. Morris, Birmingham, Ala. (page 181).

Honorary Member, DR. GEORGE TUCKER HARRISON, New York, N. Y., read a paper on *Extensive Lacerations of the Cervix Uteri, Involving the Parametrium—Their Significance and Treatment* (page 182).

DR. E. T. BRADY, Abingdon, read a paper on *Sacral Hematoma—Spina Bifida Converted into Hematoma During Breech Presentation—the Tumor Presenting* (page 185).

DR. HARVEY B. STONE, University, read a paper on *Treatment of Cancer* (page 186).

DR. HUGH M. TAYLOR, Richmond, read a paper on *Carcinoma of the Breast* (page 190).

Both of the above papers were discussed in conjunction by Drs. J. Shelton Horsley, Richmond (page 192); Southgate Leigh, Norfolk (page 193); A. L. Gray, Richmond (page 193), and Hugh M. Taylor, Richmond (page 193).

DR. R. H. WHITEHEAD, University, being absent, his paper on *Interstitial Cells of the Testes*, was read by title and referred to the Committee on Publications (page 194).

DR. JAMES W. HUNTER, Norfolk, read a paper on *The Treatment of Hypertrophied Prostate* (page 196).

Discussed by Drs. A. L. Gray, Richmond (page 198); S. C. Slaughter, Lynchburg (page 199); R. I. Hicks, Warrenton (page 199), and James W. Hunter, Norfolk (page 199).

Honorary Member, DR. W. B. DEGARMO, New York, N. Y., read a paper on *Bladder Wounds in Hernia Operations* (page 200).

Discussed by Drs. George Ben Johnston, Richmond (page 203); J. Wesley Bovee, Washington, D. C. (page 203); B. L. Hillsman, Richmond (page 204), and W. B. DeGarmo, New York, N. Y. (page 204).

DR. E. M. MAGRUDER, Charlottesville, read a paper on *Gall Bladder Operations* (page 204).

Discussed by Dr. Southgate Leigh, Norfolk (page 206).

Honorary Member, DR. GEORGE TULLY VAUGHAN, Washington, D. C., being absent, his paper on *Gastro-Enterostomy for Ulcer of the Stomach* (page 206) was read by title and referred to the Committee on Publications, as was also the paper on *Surgery of the Bile Tract*, by DR. J. E. CANNADAY, Charleston, W. Va. (page 209).

DR. J. SHELTON HORSLEY, Richmond, read a paper on *Report of Two Cases of Mechanical Obstruction of the Bowel* (page 215).

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DR. SOUTHGATE LEIGH, Norfolk, read a paper on *Some Further Applications of the Fowler-Murphy Method* (page 219).

DR. W. LOWNDES PEPLE, Richmond, read a paper on *Economics of Appendicitis* (page 222).

DR. JAMES W. HENSON, Richmond, read a paper on *Stitching in Tracheloraphy* (page 226).

DR. G. PAUL LAROQUE, Richmond, read a paper on *Thoracic Complications of Suppurative Intra-Abdominal Disease* (page 227).

The hour for the installation of the new President, DR. STUART MCGUIRE, Richmond, having arrived, the retiring President, Dr. William F. Drewry, Petersburg, said:

It is more than an especial pleasure to me to see Dr. McGuire called to be President of the Medical Society of Virginia, the highest honor to be conferred upon a Virginia doctor. No man in the profession can wear this honor better than Dr. Stuart McGuire. My acquaintance with him has extended over quite a number of years. He is one of the highest, most capable and noblest men I have ever known. He will make you a President second to none you have ever had. Look back over the list prior to the present year, and you will see the names of the leading men in the profession. Dr. McGuire will make a most worthy successor to any of those men.

DR. STUART MCGUIRE, *Richmond:* I thank you sincerely for the warmth of your greetings. When I was a small boy I remember my mother telling me it was possible some day I might be President of the United States, but even at that time I did not regard the prospect seriously. I remember later my father telling me that if I lived long enough and worked hard enough he hoped some day I might be President of the Medical Society of Virginia, and since that hour the position has been the goal of my professional ambition. The honor has come to me sooner than I deserved it, sooner than I expected it, and I can say honestly sooner than I wished it. It would have been better for and better for the Society had it been postponed some years. As it is, I have now attained at a comparatively early period of life what I regard as the highest honor in the gift of my professional brethren, and I feel that, no matter what the future may hold in store for me, I have exhausted its greatest possibility. My election as President of the Medical Society of Virginia is not only pleasing to me individually, but gratifying to my family, as I am the third man of my name to be chosen to preside over the destinies of the Socety in the last thirty years of its existence, my father, Dr. Hunter McGuire, and my uncle, Dr. William P. McGuire, having both preceded me in the office.

I am also glad to be the first President elected under the new Constitution. In fact, as much as I prize the honor that has been conferred upon me, I would not have accepted it if I had been elected under the old Constitution. As long as the choice of the President was determined by a vote of the majority of those present at a meeting, it was manifestly unfair for a local candidate to run in opposition to someone from a distant part of the State. Not only were the number of local voters always sufficient to control the election, but the voters from a distance were embarrassed by the obligation under which they were placed by the hospitality extended them by the profession in the place in which the meeting was held. I am on record as having once introduced a resolution to amend the Constitution so as to correct this evil by making a resident of the place at which the Annual Meeting was held ineligible for office. This resolution was never acted upon, as the reason for this change was done away with by the adoption of the new Constitution. Under the present rule the officers of the Society are nominated by the delegates from the Congressional Districts, who are chosen by their constituents before the meeting. As I have been nominated by these delegates in their joint meeting, I feel that I am the choice, not only of the members of the Society

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attending this session, but also of those who, while absent, expressed their wishes through their representatives. I, therefore, accept the position gladly. I do so with a sincere appreciation of the compliment which has been paid me, but also with a due sense of the responsibilities which fall upon my shoulders. I promise to study carefully the needs of the Society, to devote my best energies to the advancement of its interests, and to endeavor in every way possible to carry out the policies which have been outlined and put into operation by my friend and predecessor, Dr. William F. Drewry.

Dr. J. N. Upshur, Richmond, nominated Dr. William F. Drewry, Petersburg, for Honorary Membership. On vote, Dr. Drewry was unanimously elected an Honorary Member.

Dr. W. W. Chaffin, Pulaski, moved that the thanks of the Society be tendered the management of the Jefferson Hotel for the use of the Auditorium without charge. Carried.

It was also moved and carried that the thanks of the Society be extended to the local profession for their courtesies, especially to the ladies in attendance.

On motion, at 3:30 P. M., October 23, 1908, the Society adjourned *sine die*.

The Treasurer has to record the following as "delinquents," bills having been repeatedly sent the parties by him, and urgent letters have also been written each of them by the Secretary calling attention to the law: Drs. Moses Benmosche, C. M. Branch, J. W. Brown, A. H. Buckmaster, O. S. Burns, G. M. Burton, D. O. Clements, H. W. Cook, C. W. Cowper, F. M. Cunningham, J. H. Delaney, S. T. Elliott, T. W. Evans, J. C. Gordon, J. H. Hargrave, S. G. Jett, R. P. Jones, Paul Kernan, R. A. Martin, W. B. Meredith, E. L. Phipps, J. G. Riddick, S. S. Simpson, J. A. B. Sinclair, B. R. Smith, N. W. Stallard, S. A. Sutton, W. F. Wallace, Thomas Watkins, R. E. Wilkinson, T. F. Willson, George E. Williams, W. H. Yeakley, and G. H. Zimmerman.

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Constitution and By-Laws

OF THE

Medical Society of Virginia.

The former revision of the Constitution and By-Laws, as a whole, was made during the session of 1883, held at Rawley Springs, Va. Since then a number of amendments and substitutions have been enacted—some of them in the form of resolutions.

It being generally recognized that other radical, yet conservative, changes were needed, during the session of the Society at Charlottesville, Va., 1906, a committee (composed of Drs. Rawley W. Martin, of Lynchburg, chairman; William F. Drewry, of Petersburg; R. M. Slaughter, of Theological Seminary, and Greer Baughman and Landon B. Edwards, of Richmond,) was appointed for the purpose of preparing a form for a new Constitution and By-Laws for the government of the Society.

The following is the report of the said committee, presented and adopted during the session of the Society at Chase City, Va., November 12-14, 1907.

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CONSTITUTION.

ADOPTED DURING SESSION 1907.

ARTICLE I.

TITLE.

The name of this Society shall be the Medical Society of Virginia.

ARTICLE II.

OBJECTS.

The objects of this Society shall be the collection, diffusion, interchange, preservation of medical knowledge in the State of Virginia, the elevation of the standards of medical education and the promotion of friendly intercourse among its members.

ARTICLE III.

ETHICS.

The Society adopts and conforms to the Principles of Ethics of the American Medical Association, as originally enunciated.

ARTICLE IV.

MEMBERSHIP.

SECTION 1. Any reputable regular white physician, male or female, who is or has been a licensed practitioner in the State of Virginia, who has reached the age of twenty-one years, and who has received from some University or College a degree of Doctor of Medicine or Surgery, and who has complied with the laws regulating the practice of medicine and surgery in Virginia or in the territory in which he or she resides, or any white medical officer of the United States Army, Navy or Public Health and Marine Hospital Service while stationed in Virginia, is eligible to Active Membership in this Society.

SECTION 2. Representative teachers who are students of sciences allied to medicine, resident in Virginia, and not eligible to active membership, may become Associate Members of this Society. They shall enjoy the same privileges, and be subject to the same conditions as Active Members.

SECTION 3. Honorary Membership may be conferred upon (1) ex-Presidents of this Society; (2) active members of five years' standing, who shall have rendered eminent services to this Society, or shall have prominently advanced medical knowledge; (3) distinguished physicians or surgeons without the State of Virginia.

ARTICLE V.

RESIGNATION OF MEMBERS.

Any member wishing to withdraw from the Society shall be permitted to do so on his written request, filed with the Secretary, after he shall have presented the Treasurer's receipt for all moneys due the Society.

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ARTICLE VI.

OFFICERS.

The officers of this Society shall consist of a President, a First, Second and Third Vice-President, a Secretary, a Treasurer, and fifteen Councilors, who, with the President as an *ex-officio* member, shall be known as the Executive Council. These officers shall be elected by the Society and continue in office until their successors are installed.

ARTICLE VII.

STANDING COMMITTEES.

The Standing Committees of this Society shall consist of a Judiciary Committee, consisting of seven members; a Legislative Committee, consisting of five members; a Membership Committee, consisting of five members. These committees shall be elected by the Society, and shall continue in office until their successors are installed. The Presdient shall be *ex-officio* a member of all Standing Committees.

ARTICLE VIII.

ANNUAL SESSIONS.

This Society shall hold annual sessions at such places and times as it may determine.

ARTICLE IX.

QUORUM.

Thirty-five members shall constitute a quorum for the transaction of business.

ARTICLE X.

AMENDMENTS.

This Constitution may be amended at any regular annual session by four-fifths of the votes taken on such proposition; or if notice of the amendment asked be advertised to all members of the Society through the Executive Council, a two-thirds vote in its favor may adopt it. All proposed amendments shall be presented in writing, and signed by not less than three members of the Society.

ARTICLE XI.

WHEN IN FORCE.

This Constitution shall be in force immediately upon adjournment of the session of the Society at which it is adopted; and the officers, delegates, boards and committees elected under the preceding Constitution and By-Laws shall remain in office until their successors are installed under the revised or new Constitution and By-Laws adopted.

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BY-LAWS.

ARTICLE I.

ACTIVE AND ASSOCIATE MEMBERSHIP.

SECTION 1. Every application for Active or Associate Membership in this Society shall be endorsed by a member of this Society, and shall be accompanied by the initiation fee of two dollars.

SECTION 2. The applicant may be elected to Active or Associate Membership by a two-thirds vote of those voting at an annual session of the Society.

ARTICLE II.

HONORARY MEMBERSHIP.

SECTION 1. Only Three Honorary Members may be elected at any annual meeting of the Society. Two of these may be from within the boundaries, but only one without the boundaries, of the State of Virginia.

SECTION 2. Non-resident Honorary Members shall have all the privileges of Active Members, except that of voting.

SECTION 3. Honorary Members may be elected by a two-thirds vote of those voting at an annual meeting of the Society.

ARTICLE III.

CERTIFICATE OF MEMBERSHIP.

SECTION 1. Every member in good standing shall be furnished with a Certificate of Membership upon his, or her, application therefor to the Secretary of the Society.

SECTION 2. The following shall be the form of the certificate:

MEDICAL SOCIETY OF VIRGINIA.

[Incorporated by Act of Assembly, Approved January 17, 1871.]

KNOW ALL MEN BY THESE PRESENTS, *That..... was duly elected .....member of the Medical Society of Virginia; and that....is entitled to all the immunities, privileges and honors guaranteed by the Charter, Constitution and Laws of the Society; irrevocable, except by due action of the body, as specified and provided for by the said Constitution and Laws.*

IN TESTIMONY OF THE ABOVE, *The signature of the President and the Secretary, together with the Great Seal of the Society, are hereto affixed.*

SEAL

Done at.....on the.....day of....., in the year of our Lord....., and of the Society.....

———— ————, PRESIDENT.

———— ————, SECRETARY.

ARTICLE IV.

FORFEITURE OF MEMBERSHIP OR OTHER CENSURE.

SECTION 1. Any member who shall be guilty of gross misconduct, either as a member or citizen, shall be liable to expulsion, or such other censure as the Society may approve, and any member who may be expelled shall be de-

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barred from the rights of consultation, or the privileges of professional intercourse with any member of the Society.

SECTION 2. But no judgment of expulsion, suspension or other censure shall be passed upon any member unless he or she shall have been given two months' notice through the Executive Council, and received a fair trial before the Society. No member shall be expelled except by the votes of three-fourths of those present; and should such member come forward within twelve months succeeding his or her expulsion, and offer a satisfactory explanation, he or she may be reinstated without expense, provided three-fourths of those present concur.

SECTION 3. Any one who is expelled shall, if he or she have in his or her possession the Certificate of Membership in the Society, return the same to the Secretary; and upon failure to do within six months after such expulsion, it shall be the duty of the Secretary (due notice being given) to publish that such member had been expelled from the Medical Society of Virginia.

SECTION 4. Delinquents, as to annual dues, of three years' standing shall be reported to the Executive Council by the Treasurer and dropped from membership, and their names published in the next volume of Transactions.

ARTICLE V.

DUES.

SECTION 1. Every member, except those hereinafter exempted, shall pay to the Treasurer, not later than the annual meeting of the Society, the sum of two dollars for annual dues.

SECTION 2. Honorary members, ex-Confederate soldiers and sailors and members who have reached the age of seventy years, are exempt from payment of annual dues.

ARTICLE VI.

ELECTION OF OFFICERS, COMMITTEES, TERMS OF OFFICE, ETC.

SECTION 1. At the afternoon session on the day preceding the last day of the regular annual meeting of the Society, first in order of business after the annual report of the Executive Council, the Executive Council shall nominate to the Society all the Officers, Standing Committees, Delegates, and the Boards to be appointed by the Governor of Virginia, except the Councilors, in the following order, viz.: The President, First, Second and Third Vice-Presidents, Secretary, Treasurer, Judiciary Committee, Membership Committee, Legislative Committee, members of the House of Delegates of the American Medical Association, and Boards; but shall not nominate any of its own members for any office, Delegate or Standing Committee whatsoever; and next in order the District Councilors shall be nominated and elected as hereinafter provided. The Society shall forthwith elect, or, in the case of Boards, approve, each in the order nominated; but nothing in this or any other section shall be so construed as to prevent other nominations being made by any member of the Society except by a Councilor. If a Councilor be nominated and elected to any other office or position in the Society and accepts same, the vacancy thus made shall be filled as promptly as practicable and in the usual manner. Immediately following the election of the foregoing the Society shall elect the five Executive Councilors at large from nominations made only from the floor. The foregoing shall be subject to the following provision, namely: that all the Councilors first elected shall be elected last in the order of business, at the first meeting of the next regular annual session of the Society after the adoption of these By-Laws.

SECTION 2. When more than two candidates are being voted for for any office, committee or position, the candidate having the smallest number of votes on the second ballot or any subsequent ballot shall be dropped. No nominating or seconding speech shall exceed three minutes in length. No nominations shall be made after the taking of the vote has begun. The vote in all elections shall be taken by either the *vive voce* or the ballot method, and a majority of all the votes cast shall be necessary to elect. An officer, a delegate

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and a member of a committee or board may be elected and technically installed *in absentia.*

SECTION 3. The District Councilors may be nominated by any of the methods herein prescribed, in the order named, and their names presented to the Society for election or rejection, as the Society may determine: *First,* at any time within the year prior to the annual meeting of this Society, not less than twenty of the members residing in any Congressional district may hold a meeting and select a member for nomination as Councilor; provided, that a call, signed by not less than twelve (one of whom shall be designated as secretary, fixing the time and place of such meeting, shall be sent by the member designated as secretary, or the Secretary of the Society, to every other member in the district. The name of the member thus nominated as Councilor shall be reported in writing by the secretary of the meeting to the clerk of the Executive Council, and also to the Secretary of the Society, not later than the hour at which the Society convenes. Or, *Second,* the members of the Society present from each of the several Congressional districts may meet in the afternoon of the day preceding the day of the regular election of officers, at a place and time provided by the Executive Council and announced by the President and published in the assembly hall of the Society, and nominate by ballot a Councilor from their district; provided, that at the first annual session of the Society following the adoption of these By-Laws, such meeting may be held on the evening of the first meeting of the session. Or, *Third,* if there are no members present at such meeting, as provided in the foregoing, and if no nomination is made, the President shall nominate the Executive Councilor for such district. In any case the name of the member nominated shall be reported to the Society at the time designated in Section one of this Article. In the event that nomination for District Councilor, made by any of the foregoing methods, is not satisfactory to the Society, it may reject it and order that another nomination be made at once, in the usual manner, and promptly reported.

SECTION 4. No member shall be eligible for election as President for more than one term, nor as Vice-President, nor as Councilor, for two succeeding full terms, except those Councilors first elected for one year, as hereinafter provided. Not more than one Vice-President, nor more than two members of any standing committee or board shall be from the same Congressional district. No member shall hold, at the same time, more than one office, or be a member of more than one standing committee.

SECTION 5. The President, Vice-Presidents, Secretary, Treasurer and members of all standing committees shall each be elected for one year; the members of the House of Delegates of the American Medical Association, each for two years; the Councilors each for three years, except that at the first election, they shall be elected for one year—their terms to expire near the close of the second session (1909). At the next election the five Councilors at large shall be elected two for one, two for two, and one for three years, respectively; and three of the District Councilors for one year, three for two years, and four for three years, respectively; so that after the second annual session five new Councilors are elected each year. The respective terms of all the Councilors elected at the first and second sessions are to be determined by lot by the Council in session, and reported to the Society. The officers and committees shall enter upon their duties immediately before the final adjournment of the session at which they are elected, except that the Councilors first elected shall enter upon their duties immediately after their election.

SECTION 6. If any officer or member of any committee or board, or delegate, is absent from all meetings, and does not perform any of the duties assigned him or her by these by-laws for the period of one year, without satisfactory reasons, such negligence shall *ipso facto* work forfeiture of his or her office or position, and prohibit his or her re-election for an immediate succeeding term.

ARTICLE VII.

DUTIES OF OFFICERS.

SECTION 1. It shall be the duty of the President to preside at all meetings of the Society, to preserve order and regulate the proceedings according to the most approved parliamentary rules. The President shall appoint all special

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committees and fraternal delegates to other medical societies, and shall also fill temporarily vacancies occurring during the sessions of the Society, unless otherwise ordered by the Society. He may also invite not more than three distinguished physicians or surgeons to read papers before the Society. He shall be *ex-officio* member of the Executive Council and of all standing committees.

SECTION 2. In the absence of the President, a Vice-President, according to rank, shall perform all the duties appertaining to the chair. But when there is no Vice-President present the Society shall elect a presiding officer *pro tempore.*

SECTION 3. The Secretary shall keep a correct postoffice record of all members of the Society—active, associate and honorary—and publish the same in the annual Transactions of the Society, in the form of an alphabetically arranged Biographical Register of Members. He shall provide for the registration of members, fraternal delegates and invited guests attending the annual or called sessions. He shall keep minutes of these sessions and publish the same in the Transactions. Two months in advance of each annual session he shall mail postal requests to all members for titles of papers they propose to contribute, responses to which should be in his hands within three weeks thereafter, to insure acceptance by the Executive Council, or its sub-committee, for publication in the regular program of the approaching session. Under advisement of the Executive Council, or its sub-committee, he shall prepare and issue the regular program of the approaching session at least four weeks in advance of same. In the event of a called session, he shall mail notification to all members of the time and place of meeting, and the special object of the same, in ample time to permit all members within the State to attend. With the consent of the Executive Council he shall have authority to employ stenographic or other assistance for the sessions of the Society, to be paid for out of the funds of the Society. He shall be the custodian of the records and papers of the Society, except those that belong to the Treasurer or other officer or committee. Whenever a special committee is appointed he shall furnish each member of the same with a copy of the minute of appointment, and the chairman with any documents in his possession that may be essential to the duties of the said committee. He shall notify the Executive Council of any important fact concerning the Society that may seem proper for its advisement and action. He shall notify all members and officers of their election. He shall conduct the general correspondence of the Society, and keep its officials advised of matters which may come to his knowledge, and of which they should be informed. In so far as it is in his power, he shall help officials and committees of the Society in the performance of their duties; and he shall, by correspondence or otherwise, use the influence of his office to aid in the extension of the usefulness of the Society. To enable the Secretary to give proper attention to his duties, a salary shall be fixed for each fiscal year, on the recommendation of the Executive Council.

SECTION 4. The Treasurer shall be the collector and custodian of all moneys arising from the admission and annual assessments of members, or from any other source. He shall pay out of the funds in his hands the ordinary expenses of the Society; but in the case of an apropriation for a special purpose he shall not pay out the sum appropriated until the proposal to appropriate shall have been submitted to and approved by the Executive Council, and passed by a three-fourths vote of the members present at a regular meeting of the Society. He may employ agents, prosecute and defend suits, secure counsel by order of the Society, or, in the *interim*, by order of the Executive Council. He may place the accounts of delinquents in the hands of a collector for collection by action of law, by compromise, or otherwise, as he may direct. He shall keep regular accounts with the Society, and between the Society and the members thereof; and three days before the first day of each annual session of the Society he shall close his books and prepare a detailed report of the business of his office, which shall be submitted, through the Executive Council, to the Society at its coming meeting. When his successor is elected he shall deliver up to him all books, money, or other property of the Society remaining in his hands. For the faithful performance of his duties the Treasurer, before entering thereon, shall execute bond, with security to the Executive Council, for the amount which they, or any two of them, shall judge he may prob-

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ably become entrusted with each year of his continuance in office. He shall receive as compensation for his services ten per cent of the amount annually collected from initiation fees and annual assessments.

ARTICLE VIII.

DUTIES OF THE EXECUTIVE COUNCIL.

SECTION 1. The Executive Council shall hold two regular meetings—one to be known as the Annual Meeting, at the place, and in the evening of the second day of the annual meeting of the Society, for the purpose, mainly, of choosing members to be nominated to the Society, for all the offices (except Councilors), standing committees, boards and delegates, and of preparing or completing its annual report; the other before the adjournment of the Society, after the elections, or as soon afterwards as practicable, for the purpose, mainly, of reorganizing, electing a chairman and a clerk, and mapping out, as far as practicable, its work for the ensuing year; and shall also hold special meetings at such times and places as it may appoint, or on request of five Councilors:—provided, that the hours of meeting during the session of the Society shall be so fixed as not to occur at the time of the opening meeting of the Society, or at the time the President delivers his address, or when the subject for general discussion is presented.

SECTION 2. Five members of the Executive Council shall constitute a quorum at any meeting except the annual meeting, at which all the districts and the Society at large shall be represented by the several Councilors in person, or by appointment by the President in the absence of any such representatives. It shall keep regular minutes of all its proceedings in a book provided for that purpose, which shall be open at any time to the inspection of any member of the Society.

SECTION 3. It shall carefully select from the membership of the Society, for nomination, all the several officers and members of the standing committees, boards elected either by the Society or recommend by it to be appointed by the Governor of Virginia, and members of the House of Delegates to the American Medical Association; but in making such nominations it shall, as far as practicable, have the membership of the Society in every part of the State fairly represented. It shall fill all vacancies in offices, standing committees elected, boards recommended by the Society, occurring in the *interim* of the annual sessions of the Society, and such appointment shall stand until the regular election is held at the next annual meeting of the Society. Subject to the Charter, Constitution and By-Laws of the Society, the Executive Council is authorized and directed to manage, during the intervals of the annual meetings of the Society, all its affairs, and to take such other action as it may deem proper and advisable for the best interests of the Society.

SECTION 4. While it is the intention of these By-Laws that the details of all business affairs of the Society shall be referred and attended to by the Executive Council, in order that the sessions of the Society may be devoted principally to medical and scientific matters, nothing herein shall be so construed as to prevent the Society from referring any special matter not otherwise provided for in the Constitution or By-Laws to a committee appointed by the President for such purpose.

SECTION 5. The Executive Council shall see that the Treasurer's and other officers' bonds have been duly executed, recommend the amount of the salary of the Secretary, examine, approve and authorize the payment of all bills properly incurred on account of the Society, or any of its committees or agents, and shall supervise all the expenditures of funds belonging to the Society, unless otherwise specifically provided for, and once a year, or oftener, examine the accounts of the Treasurer, and the books and records kept by any of the officers or committees, prescribe the system and direct the method of keeping and preserving the same, and report annually to the Society the condition in which all such accounts, books and records are kept. It shall devise and enforce whatever means it may deem advisable to insure the prompt payment of all dues of members and of all other indebtedness to the Society.

SECTION 6. All motions, resolutions, inquiries and reports pertaining to the appropriation or the expenditure of money, or those in any way affecting

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the general policy or welfare of the Society, all proposed amendments to the Constitution or the By-Laws, and any other matter that the Society may choose, shall first be referred to the Executive Council, and it shall investigate all such motions, resolutions, reports, inquiries or other matters so referred as promptly and as fully as circumstances will permit, and submit to the Society reports thereon, with such recommendations as it may deem best. Recommendations, reports and official acts of every nature whatsoever made, rendered or performed by the Executive Council, may be discussed by any member of the Society in session, and amended, rejected, approved or referred, as the Society may determine. The Society may, at its discretion, refer any matter back to the Executive Council for further and more complete investigation. The Executive Council may appoint from its own members sub-committees for the consideration of any matters within its jurisdiction, and may also appoint committees, consisting of other members of the Society, to assist it in any matter (except special matters referred to it by the Society), which, on account of location or other good reason, neither it, nor any of its sub-committees, can properly consider; provided, however, that, in every instance, it shall assume the entire responsibility for the acts of any and all of its committees or agents.

SECTION 7. It shall fix the time and place for each annual session of the Society, and select for each session a subject for general discussion or for each such session a symposium of general interest to the profession, provide a leader or leaders for the same, and also such other papers, addresses, clinics and scientific reports, including reports of specially interesting cases not requiring over five minutes each, as it may consider desirable and of proper character. It may require a brief abstract of each original paper before it is announced on the program or presented to the Society; and such abstract may be published on the program in connection with the title of the paper. Five weeks in advance of each annual meeting of the Society the Executive Council shall prepare and have published the official program of the approaching session, and direct the Secretary to issue to each member of the Society a copy of the same four weeks in advance of the session. This program shall contain memoranda of all important matters referred to the Executive Council by the Society, all proposed amendments to the Constitution and By-Laws, and any important recommendations it has determined to make in reference to any such matters. The Executive Council shall have the Transactions published and bound in appropriate form and distributed as speedily as possible.

SECTION 8. It shall be the duty of the Executive Council to procure and present to the Society at each annual session memorials of any members of the Society who have died since the last meeting.

SECTION 9. The Executive Council shall present to the Society at its regular annual sessions a written report containing a *resumé* of its transactions during the year, and such other matters with suggestions or recommendations, as it may deem to be of interest and value to the Society or to the medical profession of the State.

SECTION 10. When requested by the Executive Council, the Secretary and Treasurer shall attend its meetings and give such information regarding their respective offices as may be of value to the Council in performing its duties to the Society.

ARTICLE IX.

DUTIES OF STANDING COMMITTEES.

SECTION 1. The Judiciary Committee shall decide all questions of ethics referred to it. No question of this sort shall be entertained by the Society unless it is referred back by the Judiciary Committee.

SECTION 2. It shall be the duty of the Judiciary Committee to investigate any charges preferred against a member, and recommend such action by the Society as it may deem proper.

SECTION 3. It shall be the duty of the Legislative Committee to take cognizance of all legislation pertaining to the medical profession. It shall represent before the State Legislature the wishes of the Medical Society of Virginia regarding any proposed legislation that in any respect bears upon the promotion and the preservation of the public health or on the material or moral welfare of the medical profession.

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SECTION 4. The Membership Committee shall receive the applications of all persons desiring to join the Society, who are eligible under the provisions of Sections 1 and 2, Article IV., of the Constitution, and shall determine in meetings upon their character as citizens and physicians, and upon their qualifications and fitness for membership. If they are judged worthy of nomination by four members of the Committee, their nomination to the Society shall be made by a report of the Committee, upon call of the President. This report shall be in writing, signed by not less than four members of the Committee, and shall set forth in columns (a) the name and title in full of the applicant; (b) his postoffice and county in which he resides; (c) the date and name of the certificate under which he is entitled to membership; and (d) the name of one member by whom he is endorsed. The report shall be read in full, or any part of it, respecting any applicant, upon request of any member of the Society, and handed to the Secretary always as soon as prepared.

ARTICLE X.

DELEGATES TO CONVENTIONS.

SECTION 1. Delegates to the American Medical Association and to other conventions may be elected by a majority vote of those voting at an annual meeting of the Society.

SECTION 2. They shall obey any instructions given them by the Society, and shall at the next succeeding annual session after their appointment report to the Society.

ARTICLE XI.

MEETINGS OF THE SOCIETY.

SECTION 1. The Society shall be convened at such places and times as may be provided for by the Executive Council.

SECTION 2. Special or intermediate meetings may be held by resolution of the Society at its annual sessions, or by the request of five members residing in different counties, with the concurrence of the Executive Council; and the fact shall be properly advertised by the Executive Council in such manner as it may deem best.

SECTION 3. No business affecting the Constitution shall be transacted at a called meeting.

ARTICLE XII.

ORIGINAL COMMUNICATIONS.

SECTION 1. No paper shall appear on the program of a session of the Society unless the title shall have been sent to the Secretary at least five weeks before such session of the Society. Short abstracts of papers should be sent with the title.

SECTION 2. No paper shall be read before this Society that has previously been published.

SECTION 3. Papers, while the property of the Society, may be published after the meeting of the Society in any reputable medical or scientific journal.

SECTION 4. The reading of no paper is to exceed twenty minutes.

SECTION 5. No speaker will be allowed to speak more than twice in discussing a paper or in speaking to a motion. These speeches shall be limited to five minutes each.

SECTION 6. No motion to change the sequence of papers as they appear in the official program shall be entertained by the chair, except under suspension of rules.

SECTION 7. The original articles shall be read by their authors. The absence of the author, when the title of the paper is called by the presiding officer, relegates his paper to the end of the program.

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ARTICLE XIII.

ORDER OF BUSINESS.

SECTION 1. The meetings of the Society shall be called to order by the presiding officer at the time announced on the program.

SECTION 2. The order of business shall be as follows: (1) Opening of the session with prayer; (2) reading and adoption of the minutes of the preceding meeting; (3) election of new members; (4) registration of members; (5) President's address; (6) reports of officers and committees; (7) discussion of selected subject; (8) reading and discussion of original articles; (9) unfinished business; (10) new business; (11) election and installation of officers and committees; (12) adjournment.

ARTICLE XIV.

RULES OF ORDER.

Where not in conflict with the preceding Constitution and By-Laws, Roberts' Rules of Order is the recognized authority.

ARTICLE XV.

AMENDMENTS.

SECTION 1. These By-Laws may be suspended during the whole or part of any day of a meeting by a three-fourths vote; for their permanent alteration a two-thirds vote of those voting at any meeting is necessary.

SECTION 2. All proposed amendments shall be submitted in writing, and signed by not less than three members of the Society.

ARTICLE XVI.

WHEN IN FORCE.

These By-Laws shall be in force immediately upon adjournment of the session of the Society at which they are adopted.

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ALPHABETICAL LIST

OF THE

NINETY-TWO DOCTORS

Who assembled in Convention in Richmond, Va.,
November 2, 1870, to organize the

Medical Society of Virginia

The * preceding some names indicates the parties who have died up to October 23, 1908.

The † preceding some names indicates parties who have resigned Fellowship, or else have been dropped from the Register for one reason or another.

Names printed in heavy-faced type were on the Register on adjournment of Session 1908.

During the session at Richmond, October 18-21, 1904, all surviving Members of Society who became Members at the Richmond session, 1870, not heretofore so honored, were elected Resident Honorary Members.

†Drs. E. T. Adams.
*Edward H. Allen.
*Carthon Archer.
*Carter Berkeley.
*Benjamin Blackford.
*W. C. Booth.
*George H. Bright.
*Thomas E. Brown.
*P. F. Browne.
*J. Grattan Cabell.
*George C. Carrington.
*William J. Cheatham.
*L. R. Chiles.
*M. P. Christian.
*John Herbert Claiborne.
*V. T. Churchman.
*Robert T. Coleman.
*N. M. Corbin.
*R. H. Cox.
*J. S. D. Cullen.
*Francis D. Cunningham.
*John W. Davis.
*John Dove.
*E. A. Drewry.
Landon B. Edwards.
*George H. Eyster.
*O. Fairfax.
*A. M. Fauntleroy.
*George Fleming.
*Jenifer Garnett.

Drs. John R. Gildersleeve.
*William A. Gillespie.
*H. M. Grant.
*Robert S. Hamilton.
Lewis E. Harvie, Jr.
*Carter Haskins.
*R. W. Haxall.
*Z. B. Herndon.
*William Otho Hill.
*William D. Hopkins.
*Frederick Horner, Jr.
*M. H. Houston.
*M. L. James.
*A. G. Jones.
*L. S. Joynes.
*D. W. Lassiter.
*Henry Latham.
*W. Augustus Lee.
†C. S. Lewis.
*Charles Macgill.
*O. F. Manson.
*S. Maupin.
*James B. McCaw.
*W. S. McChesney.
*Gabriel McDonald.
*Hunter McGuire.
*Thomas S. Michaels.
*James D. Moncure.
E. J. Moseley.
*William Owen.

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*William W. Parker.
*Robert S. Payne.
*R. S. J. Peebles.
*E. W. Perkins.
*Charles H. Perrow.
*C. C. Phillips.
*Junius L. Powell.
*Robert M. Pulliam.
*Thomas J. Riddell.
*M. Shelton.
*John G. Skelton.
*Joseph W. Smith.
*Albert Snead.
*P. F. Southall.
*C. M. Stigleman.
*J. H. Stringfellow.
H. Cabell Tabb.
T. James Taylor.
William H. Taylor.
Christopher Tompkins.
*Peterfield Trent.
John N. Upshur.
*Howell A. Venable.
M. M. Walker.
*F. B. Watkins.
*W. T. Webster.
*William R. Weisiger.
J. Spottswood Wellford.
*George W. West.
*Isaiah H. White.
*Robert E. Withers.
*Thomas J. Wooldridge.

RECAPITULATION.

Total number Registered November 2d and 3d, 1870	92
Drs. M. H. Houston and R. E. Withers recorded their names during the Convention of Organization under a misapprehension, and requested them to be erased, and hence are to be deducted from the 92	2
Total to be accounted for	90
Of these ninety there have died	77
Resigned or dropped from register	2
	79
Remaining on Register of Members October 23, 1908	11

Of these 11, Dr. E. J. Moseley once resigned and afterwards rejoined.

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NAMES OF PRESIDENTS AND VICE-PRESIDENTS

OF THE

MEDICAL SOCIETY OF VIRGINIA,

FROM ITS ORGANIZATION, NOVEMBER 2, 1870, THROUGH 1908.

The * *preceding* many of the names refers to the fact that the parties served more than one term as Vice-Presidents; when more than twice, a figure is added to show the number of terms.

The † after some of the names indicates that the parties are dead.

The ¶ after some of the names indicates that the parties have resigned.

Chairman of the Convention which organized the Society in 1870,
DR. JAMES B. MCCAW.†

Recording Secretary of Convention which organized Society, and each year since (except 1883),
DR. LANDON B. EDWARDS.

Secretary 1883,
DR. ROBERT G. CABELL, JR.†

1870—*Richmond.*

President—Dr. R. S. Payne.†
Vice-President—*²Dr. J. S. Wellford.
J. S. Davis.†
Wm. Selden.†
T. E. Brown†
V. T. Churchman.†
Hugh McGuire.†

1871—*Lynchburg.*

President—Dr. A. M. Fauntleroy.†
Vice-President—Dr. J. F. Harrison.†
*William Selden.†
Harvey Black.†
*²J. H. Claiborne.†
*W. F. Barr.†
J. B. McCaw.†

1872—*Staunton.*

President—Dr. Harvey Black.†
Vice-President—Dr. A. S. Payne.†
Henry Latham.†
R. U. Burgess.†
*²J. H. Claiborne.†
Samuel Kennerly.†
O. Fairfax.†

1873—*Norfolk.*

President—Dr. A. G. Tebault.†
Vice-President—Dr. S. C. Gleaves.†
*²Benj. Blackford.†
L. S. Joynes.†
*O. B. Jenks.†
R. S. Hamilton.†
M. M. Lewis.†

1874—*Abingdon.*

President—Dr. S. C. Gleaves.†
Vice-President—Dr. F. D. Cunningham.†
E. M. Campbell.†
J. L. White.†
*O. B. Jenks.†
*T. B. Ward.†
*J. E. Chancellor.†

1875—*Richmond.*

President—Dr. F. D. Cunningham.†
Vice-President—*Dr. T. B. Ward.†
*²Benj. Blackford.†
*W. F. Barr.†
S. W. Carmichael.†
R. W. Nelson.
E. A. Drewry.†

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1876—*Charlottesville.*

President—Dr. J. L. Cabell.†
Vice-President—Dr. M. P. Christian.†
W. F. Figgatt.†
C. W. P. Brock.
J. W. McIlhaney.†
*Hugh Stockdell.†
G. W. Semple.†

1877—*Petersburg.*

President—Dr. J. H. Claiborne.†
Vice-President—Dr. Oscar Wiley.†
I. R. Godwin.
James Parish.†
W. C. N. Randolph.
W. S. Love.
*‡J. S. Wellford.

1878—*Richmond.*

President—Dr. L. S. Joynes.†
Vice-President—Dr. M. M. Lewis.†
*Herbert M. Nash.
E. B. Ward.†
*‡W.P. McGuire.
J. C. Green.†
Gabriel McDonald†

1879—*Alexandria.*

President—Dr. Henry Latham.†
Vice-President—Dr. Wm. H. Bramblitt.
R. C. Powell.†
*W. L. Robinson.
*‡W. P. McGuire.
W. H. Daughtry.†
Chas. C. Conway.†

1880—*Danville.*

President—Dr. Hunter McGuire.†
Vice-President—Dr. L. E. Harvie.
*J. E. Chancellor.†
R. W. Martin.
Isaac White.†
*‡Casper C. Henkel.
*Bedford Brown.†

1881—*Old Point Comfort.*

President—Dr. William Semple.†
Vice-President—*Dr. W. L. Robinson.
W. D. Cooper.†
*‡J. S. Apperson.†
W. B. Gray.†
*T. James Taylor.
*‡S. B. Morrison.†

1882—*Fauquier White Sulphur Springs.*

President—Dr. W. D. Cooper.†
Vice-President—Dr. M. C. Kemper.†
O. H. Baird.†
Jos. A. White.
*‡J. S. Apperson.†
G. B. Jennings.
*‡J. W. Dillard.

1883—*Rockbridge Alum Springs.*

President—Dr. J. E. Chancellor.†
Vice-President—*‡Dr. S. B. Morrison.†
P. K. Graybill.†
*Bedford Brown.†
S. K. Jackson.†
*J. M. Estill.†
P. J. Prétlow.†

1884—*Rawley Springs.*

President—Dr. S. K. Jackson.†
Vice-President—Dr. Jesse Ewell Sr.†
*‡Benj. Blackford.†
*R. I. Hicks.

1885—*Alleghany Springs.*

President—Dr. R. W. Martin.
Vice-President—*‡Dr. Jno. S. Apperson.†
T. B. Greer.†
H. M. D. Martin.†

1886—*Fredericksburg.*

President—Dr. Bedford Brown.†
Vice-President—Dr. Alex. Harris.†
*Herbert M. Nash.
*‡L. Ashton.†

1887—*Richmond.*

President—Dr. Benjamin Blackford.†
Vice-President—Dr. H. M. Clarkson.
*John Grammer.†
Wm. D. Turner.

1888—*Norfolk.*

President—Dr. E. W. Row.†
Vice-President—Dr. Wm. S. Christian.
George S. Luck.¶
*‡L. Ashton.†

1889—*Roanoke.*

President—Dr. Oscar Wiley.†
Vice-President—*Dr. J. M. Estill.†
A. C. Palmer.
*‡C. C. Henkel.

1890—*Rockbridge Alum Springs.*

President—Dr. Wm. W. Parker.†
Vice-President—*‡Dr. Jno. W. Dillard.
Jacob Michaux.
H. M. Patterson.†

1891—*Lynchburg.*

President—Dr. H. Gray Latham.†
Vice-President—Dr. J. R. Gildersleeve.
*Hugh Stockdell.†
J. B. Moore.

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1892—*Alleghany Springs.*

President—Dr. Herbert M. Nash.
Vice-President—**Dr. Wm. P. McGuire.
*T. James Taylor.
A. Z. Koiner.†

1893—*Charlottesville.*

President—Dr. Wm. P. McGuire.
Vice-President—Dr. Robert J. Preston.†
Wm. G. Rogers.†
R. M. Slaughter.

1894—*Richmond.*

President—Dr. Robert J. Preston.†
Vice-President—Dr. Wm. C. Day.
C. M. Stigleman.†
*Jno. Grammer.†

1895—*Wytheville.*

President—Dr. Wm. L. Robinson.
Vice-President—Dr. Geo. Ben Johnston.
A. S. Priddy.
Chas. W. Gleaves.¶

1896—*Rockbridge Alum Springs.*

President—Dr. Geo. Ben. Johnston.
Vice-President—Dr. Wm. C. Day.
T. W. Simmons.†
L. H. Keller.

1897—*Hot Springs.*

President—Dr. Lewis E. Harvie.
Vice-President—Dr. L. G. Pedigo.
A. S. Rixey.
H. C. Cline.

1898—*Virginia Beach.*

President—Dr. Jacob Michaux.
Vice-President—Dr. B. M. Atkinson.
E. C. Levy.
*E. T. Brady.

1899—*Richmond.*

President—Dr. Hugh T. Nelson.†
Vice-President—Dr. Southgate Leigh.
**S. T. A. Kent.
*R. I. Hicks.

1900—*Charlottesville.*

President—Dr. J. R. Gildersleeve.
Vice-President—Dr. John H. Neff.
J. E. Copeland.
Chas. W. Pritchett.

1901—Lynchburg.

President—Dr. R. S. Martin.
Vice-President—Dr. L. Lankford.
R. S. Griffith.
S. W. Dickinson.

1902—*Newport News.*

President—Dr. John N. Upshur.
Vice-President—Dr. Wm. F. Cooper.
R. W. Sanders.†
Junius F. Lynch.

1903—*Roanoke.*

President—Dr. Joseph A. Gale.
Vice-President—Dr. W. E. Anderson.
**S. T. A. Kent.
Israel Brown.

1904—*Richmond.*

President—Dr. Wm. S. Christian.
Vice-President—Dr. Lewis C. Bosher.
Harry Myers.
John D. Butler.†

1905—*Norfolk.*

President—Dr. Lomax Gwathmey.
Vice-President—Dr. **S. T. A. Kent.
Greer Baughman.
T. C. Quick.

1906—*Charlottesville.*

President—Dr. Paul B. Barringer.
Vice-President—Dr. B. B. Bagby.
Frank H. Hancock.
C. F. Rinker.

1907—*Chase City.*

President—Dr. Wm. F. Drewry.
Vice-President—Dr. F. J. Gregory.
J. B. Fisher.
H. R. Dupuy.

1908—*Richmond.*

President—Dr. Stuart McGuire.
Vice-President—Dr. O. C. Wright.
*E. T. Brady.
Reid White.

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BIOGRAPHICAL REGISTER OF MEMBERS

OF THE

MEDICAL SOCIETY OF VIRGINIA,

ALPHABETICALLY ARRANGED

ON ADJOURNMENT OF THE THIRTY-NINTH ANNUAL SESSION AT RICHMOND, VA., OCTOBER 23, 1908.

THE NON-RESIDENT HONORARY MEMBERS OF THE MEDICAL SOCIETY OF VIRGINIA ARE HERE NAMED.

Drs. J. Wesley Bovee,
Edward Cross,
T. D. Crothers,
Ed. Parker Davis,
W. B. DeGarmo,

Drs. George T. Harrison,
Jos. Taber Johnson,
J. N. McCormack,
J. H. Musser.
Joseph Price,

Drs. M. H. Richardson,
E. S. Ricketts,
A. R. Shands,
I. S. Stone,
L. McL. Tiffany,
Geo. T. Vaughan.

But for greater convenience of reference, they are more fully registered in the subjoined Alphabetically Arranged Biographical Register of Members.

THE RESIDENT HONORARY MEMBERS ARE SIMILARLY TREATED. THEY ARE:

Drs. Thomas B. Amiss,
John W. Ayler,
Paul B. Barringer,
T. L. Bondurant,
R. C. Bowles,
Wm. H Bramblitt,
C. W. P. Brock,
Wm. S. Christian,
James T. Clark,
H. M. Clarkson,
E. A. Craighill,
W. C. Day,
Wm. F. Drewry,
J. C. Dunlap.
Landon B. Edwards,
Henry Frost,
Joseph A. Gale,
James H. Garlick,
J. R. Gildersleeve,
I. R. Godwin,

Drs. L. E. Gott,
Lomax Gwathmey,
Lucien Hall,
Lewis E. Harvie,
C. C. Henkel,
R. I. Hicks,
J. A. Hillsman,
R. G. Holloway,
B. F. Hopkins,
T. H. Howard,
Geo. Ben. Johnston,
J. H. Jones,
Rawley W Martin,
R. S. Martin,
Wm. P. McGuire,
Jacob Michaux,
J. B. Moore,
T. E. Moorman,
E. J. Moseley,
H. M. Nash.

Drs. N. B. Nevitt,
E. C. Powell,
Wm. L. Robinson,
George Ross,
Wm. S. Stoakley,
R. T. Styll,
J. H. M. Sykes,
H. Cabell Tabb,
T. James Taylor,
William H. Taylor,
Chris. Tompkins,
J. G. Trevilian,
J. N. Upshur,
M. M. Walker,
H. W. M. Washington,
J. S. Wellford,
Nelson G. West,
James L. White,
A. F. Wills.

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BIOGRAPHICAL REGISTER OF MEMBERS

(ALPHABETICALLY ARRANGED.)

Including Honorary and Active Members

Honorary Members—Whether Resident or Not—Founders of the Society in 1870—the ex-Presidents, etc., are indicated by easily understood abbreviations on the lines with their names.

Figures after each name indicate Congressional District.
B—Born.
Brd.—Passed Med. Exam. Brd. Va.
Elec.—Elected member.

Abbitt, James Benjamin, Appomattox, Appomattox Co., Va.—10.
B. Appomattox Co., Va., Jan. 10, 1872. Educ. Suffolk Mil. Acad. Grad. M. D. Med. Col. Va., 1901. Brd. June, 1902. Elec., 1902.

Adair, Templeton, Lexington, Rockbridge Co., Va.—10.
Grad. M. D. Jeff. Med. Col., Phila. Brd. June, 1908. Elec., 1908.

Adams, Walter J., Norfolk, Norfolk Co., Va.—2.
B. Mathews Co., Va., Dec. 16, 1865. Educ. Gloucester Acad., Gloucester C. H., Va. and Balt. City Col. Att. Univ. of Md. 1891-2. Grad. M. D. Med. Col. Va. 1895. Brd. Spring 1895. Elec. 1897. Present 1898. Interne U. S. M. Hospt., New Orleans, 1895. Act. Asst. Surg. 1896. Surg. several Trans. Cos. Exam. several Ins. Cos.

Akers, Roley Tasville, Alumridge, Floyd Co., Va.—5.
B. Va., Nov. 12, 1858. Educ. Co. Schools and Oxford Acad. Began prac. in 1882—prior to Ex. Brd. Elec. 1905.

Alderson, Joseph D., Meadow View, Washington Co., Va.—9.
B. Lebanon, Russell Co., Va., Sept. 29, 1843. Educ. Lebanon Acad. Grad. M. D. Ky. Sch. Med. 1876. Elec. 1885. Del. Ky. State Med. Soc. 1886. Mem. Abingdon Acad. of Med. and V. Pres. Wash. Co. Med. Soc.

Alexander, Joseph Long, Mount Solon, Augusta Co., Va.—10.
B. Stuart's Draft, Va., July 31, 1877. Educ. Augusta Mil. Acad. Grad. M. D. Univ. of Va. 1900. Brd. June, 1901. Elec. 1904. Mem. Augusta Co. Med. Soc.

Alsop, Joseph French, Prospect, Prince Edward Co., Va.—4.
B. Spotsylvania Co., Va., Aug. 9, 1869. Grad. M. D. Univ. of Va. 1898. Brd. June, 1898. Elec. 1904.

Ambler, Edward C., Roanoke, Roanoke Co., Va.—6.
B. Lynchburg, Va., Feb. 13, 1870. Educ. Pub. Schs. Lynchburg and Pres. Col. Grad. M. D. Univ. of Va. 1897. Brd. June, 1897. Elec. 1900.

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Amiss, Emile P., Harrisonburg, Rockingham Co., Va.—7.
Grad. M. D. Univ. Col. Med., Richmond, Va., 1898. Brd. June, 1898. Elec. 1904.

Amiss, Thomas Benjamin, Luray, Page Co., Va. Res. Hon. Mem.—7.
B. "Melville," Rappahannock Co., Va., July 4, 1839. Educ. Va. Mil. Inst. Grad. M. D. Univ. of Pa., Phila., 1861. Elec. 1903. Hon. Mem. 1906. Present 1903. Surg. C. S. A. 1861-5. U. S. Exam. Surg. Bureau of Pen. Asst. Surg. N. & W. Ry. Co.

Anderson, Henry Watkins, Covington, Alleghany Co., Va.—10.
B. Pr. Ed. Co., Va., Aug. 17, 1856. Educ. Lynchburg High School, Hampden-Sidney Col. Grad. M. D. Balt. Med. Col. 1883. Elec. 1890.

Anderson, Hermann Boerhaave, Noel, Hanover Co., Va.—3.
B. Hanover Co., July 22, 1856. Grad. M. D. Med. Col. Va. 1882. Elec. 1908. Present 1908.

Anderson, Jackson B., Lewinsville, Fairfax Co., Va.—8.
Grad. M. D. Univ. of Va. 1888. Brd. July, 1888. Elec. 1904.

Anderson, James A., Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Univ. Va. 1879. Elec. 1885. Present 1885.

Anderson, Joseph James, Irwin, Goochland Co., Va.—3.
B. Louisa Co., Va., 1870. Educ. pub. and priv. schools. Grad. M. D. Med. Col. Va. 1893. Brd. April, 1893. Elec. 1905. Mem. Louisa Med. Assn., of Med. Assn. Med. Col. Va., of Brd. of Hlth, Goochland Co.

Anderson, Meriwether Lewis, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1900.

Anderson, Victor Vance, Lynchburg, Campbell Co., Va.—6.
B. Barboursville, Ky., Dec. 26, 1878. A. B. Union Col. Grad. M. D. Hosp. Col. Med., Louisville, Ky., 1903. Brd. Dec., 1905. Mem. and Sec. Lynch. Acad. Med., Am. Med. Assn.

Anderson, William Edward, Farmville, Prince Edward Co., Va.—4.
B. Prince George Co., Va, Sept. 10, 1866. Educ. Randolph-Macon Col. Va. Grad. M. D. Med. Col. Va. 1888. Brd. April, 1888. Elec. 1888. Present 1888, 1890, 1, 2, 1904, 7, 8.

Andrews, Charles James, Norfolk, Norfolk Co., Va.—2.
B Brierfield, Bedford Co., Va., Sept. 20, 1876. Educ. New London Acad. Grad. M. D. Med. Col. Va. 1902. Brd. Dec., 1902. Elec. 1903. Mem. Soc. Al. Med. Col. Va.; of Norfolk Med. Soc. Interne St. Vincent Hospt., Norfolk, Va., 1902-3. Lying-in Hospt., N. Y., City, 1904. Med. Ex. Mut. L. Ins. Co., N. Y.

Angle, Saul Brock, Windsor Station, Isle of Wight Co., Va.—2.
B. Richmond, Va., Sept. 11, 1880. Educ. Richmond High School. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. Dec., 1901. Elec. 1904. Med. Ex. Penn. Mut., Pru. & N. W. L. Ins. Cos.

Applewhite, Joseph Nicholas, Pope, Southampton Co., Va.—2.
B. Southampton Co. Nov. 6, 1866. Educ. Suffolk Mil. Acad. Grad. M. D. Med. Col. Va. 1895. Brd. June, 1899. Elec. 1904. Mem. Southside Va. Med. Soc.

Archer, William Carthon, Blackstone, Nottoway Co., Va.—4.
B. Amelia Co., Va., March 19, 1873. Educ. Randolph-Macon Col. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1899. Present 1899, 1908.

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Ardan, Nicholas Ivan, Keokee, Lee Co., Va.—9.
B. Cykow, Galicia, Austria, Sept. 24, 1879. Educ. Imp. Gym., Prsemyol, and Teach. Sem., Sambor, Gal. Grad. M. D. Univ. Col. Med., Richmond, Va., 1902. Brd. June, 1902. Elec. 1908. Mem. Wise and Lee Co. Med. Socs.

Armentrout, John F., Staunton, Augusta Co., Va.—10.
B. Rockbridge Co., Va., 1866. B. A. of Univ. of Va. Grad. M. D. Univ. of Md. 1903. Brd. June, 1903. Elec. 1907. Mem. Augusta Co. Med. Soc. Papers, Is Gaseous Disinfection Reliable? 1907.

Armistead, Thomas Demoval, Roanoke, Roanoke Co., Va.—6.
B. Cumberland Co., Va., Sept. 18, 1873. Educ. Priv. tutors. Grad. M. D., Med. Col. Va. 1898. Brd. 1898. Elec. 1902. Present 1902, 8. Mem. Roanoke Med. Soc.

Armstrong, Glasgow, Staunton, Augusta Co., Va.—10.
B. Salem, Va., 1874. Educ. Roanoke Col. 1888-'90, and Wash. and Lee Univ. 1892-4. Grad. M. D. Univ. of N. Y. 1898, Cornell Univ. 1899. Brd. Dec., 1900. Elec. 1902. Phy. and Gyn., Bellevue Hospt. 1898-1900.

Armstrong, Howard, Edom, Rockingham Co., Va.—7.
Grad. M. D. Univ. of Md. 1899. Brd. Nov., 1899. Elec. 1904.

Armstrong, Tremain Ernst, South Boston, Halifax Co., Va.—6.
B. Victoria Vale, Annapolis Co., Nova Scotia. Educ. Grad. of Horton Col. Acad., Walforth, N. S., and of Prov. Nor. School, Truro, N. S. Grad. M. D. Col. Phys. and Surg., Balto., 1899. Brd. June, 1899. Elec. 1899.

Arnold, Wyatt Read, Lynch Station, Campbell Co., Va.—6.
Grad. M. D. Col. Phys. and Surg., Balt., 1886. Elec. 1887. Present 1891, 1908.

Ashby, Julian W., Hugheston, Kanawha Co., W. Va.
Grad. M. D. Univ. of Md. 1905. Brd. June, 1905. Elec. 1907.

Ashton, Stuart Arthur, Colonial Beach, Westmoreland Co., Va.—1.
B. K. Geo. Co., Va., Aug. 25, 1884. Educ Wm. and Mary Col. Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1908. Mem. N. Neck Med. Soc., Phi Rho Sigma Frat. House Surg. St. Luke's Hospt., Richmond, 1907. Mem. Brd. Hlth. Westmoreland Co.

Astrop, Charles Wesley, Surry, Surry Co., Va.—4.
B. Brunswick Co., Va., Aug. 18, 1858. Grad. M. D. Med. Col. Va. 1884. Elec. 1890. Exam. Equit. L. Assn. Soc. Att. N. Y. Post-Grad. 1895.

Atkins, Price W., Marion, Smyth Co., Va.—9.
Grad. M. D. Col. Phys. and Surg., Balt., 1878. Elec. 1891. Present 1891.

Atkins, William V., Blackstone, Nottoway Co., Va.—4.
B. Nottoway Co., Va., July 1, 1857. Grad. M. D. Louisville Med. Col. 1883. Elec. 1887. Present 1887, 8, 1894-5. Asst. Surg. Nottoway Co. Almshouse. Surgeon N. & W. R. R.

Atkinson, Benjamin M., Staunton, Augusta Co., Va.—10.
B. Sherwood, Lunenburg Co., Va., July 15, 1830. Educ. Class. Schools, Petersburg. Grad. M. D. Jeff. Med. Col. 1852. Elec. 1890. Present 1891, 8. Phys. to Deaf, Dumb and Blind Inst. of Va. Papers, Olive Oil in the Treatment of Cholelithiasis, 1894.

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Atkinson, Marmaduke, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., December 27, 1879. Grad. M. D. Med. Col. of Va. 1901. Brd. Dec., 1901. Elec. 1902. Present 1902. Mem. Al. Assn. Med. Col. Va. Late Att. Phy. to St. Mary's Benedictine Inst., Richmond. Sub. Richmond City Hosp. Ex-Phy. to K. of Columbia and to Ladies' Catholic Benev. Assn., Newport News, Va.

Atwell, John R., Wicomico Church, Northumberland Co., Va.—1.
B. Washington, D. C., June 5, 1874. Educ. A. B.; Grad. M. D. Nat. (now Geo. Wash.) Univ., D. C., 1898. Brd. June, 1904. Elec. 1907. Mem. Med. Assn. D. C. Papers, Gonorrhea and Its Treatment, Carbolic Acid Poisoning and Treatment.

Ayler, John W., Newport News, Warwick Co., Va. Res. Hon. Mem.—1.
B. Fredericksburg, Va., July 15, 1838. Educ. A. B. of Ham.-Sid. Col. Grad. M. D. Med. Col. Va. 1863. Elec. 1895. Hon. Mem. 1906. Present 1895. Mem. Am. Med. Assn. Act. Asst. Surg. C. S. A. Surg. N. & W. R. R. Phys. Russell Creek Coal Co.

Aylett, Jr., William Roane, Newport News, Warwick Co., Va.—1.
B. King Wm. Co., Va., 1872. Educ. Seven Islands' Acad. Grad. M. D. Univ. Va. 1895. Brd. May, 1895. Elec. 1895. Mem. Newport News Med. Soc. Late Asst. Phys. E. State (Va.) Hospt. and Mem. Hospt., Orange, N. J.

Ayres, John Hack, Accomac Accomac Co., Va.—1.
Grad. M. D. Univ. Md. 1888. Brd. 1888. Elec. 1891.

Bachman, Joseph Sidney, Bristol, Washington Co., Va.—9.
B. Sullivan Co., Tenn., 1866. Educ. King Col. Grad. M. D. Vanderbilt Univ. 1890. Brd. Dec., 1900. Elec. 1903. Mem. Bristol Med. Soc.; of Am. Med. Assn.; of Med. Soc. of Tenn.

Bagby, Bathurst Browne, Urbanna, Middlesex Co., Va.—1.
B. Stevensville, Va., June, 1879. Educ. Washington, D. C. Grad. H. School. Grad. M. D. Columbian (now George Washingtou) Univ., D. C. 1894. Brd. June, 1904. Elec. 1905.

Bagby, John Robert, Newport News, Warwick Co., Va.—1.
B. Stevensville, King and Queen Co., Va., Nov. 23, 1868. Educ. Aberdeen Acad. and Richmond Col. Grad. M. D. Univ. Md. April, 1893. Brd. April, 1892. Elec. 1894. Present 1894. Mem. Newport News Med. Soc. Papers, Scarlet Fever, 1896.

Baggarly, Carroll Moore, Richmond, Henrico Co., Va.—3.
B. Washington, Va., March 13, 1873. A. B. of Randolph-Macon Col. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. June, 1901. Elec. 1904. Present 1904-'08. Inst. Pract. of Med. Univ. Col. Med., Richmond, 1903-'09.

Bagnall, Richard D., Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Univ. Pa. 1860. Elec. 1888. Present 1888, 9, 1902. Mem. Norfolk Med. Soc.; Soc. of Al. Univ. of Pa.; Asst. Surg. C. S. A.

Bailey, Charlie Llewellyn, Quinton, New Kent Co., Va.—3.
Grad. M. D. Med. Col. Va. 1901. Brd. June, 1901. Elec. 1904.

Bailey, Joseph Benjamin Clayville, Powhatan Co., Va.—4.
B. Skinquarter, Chesterfield Co., Va., Nov. 24, 1869. Educ. Rich. Col. Grad. M. D. Med. Col. Va. 1894. Brd. 1894. Elec. 1896. Present 1896, 8, 1908.

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Bailey, Louis J. C., Greensburg, Westmoreland Co., Pa.
B. Galt, Ont., Canada. Educ. Richmond Hill, Can. Grad. M. D. Univ. of Mich. 1888. Brd. June, 1897. Elec. 1903. Mem. Am. Med. Assn. of So. W. Va. Med. Assn.; of Wise Co. Med. Assn. Papers, Diagnosis of Cystic Tumors of the Ovaries, 1903.

Baird, James Walter, R. F. D., Waverly, Sussex Co., Va.—4.
Grad. M. D. Col. Phys. and Surg., Balt., 1874. Elec. 1893.

Baird, T. Edwin, Norfolk, Norfolk Co., Va.—2.
B. Waverly, Va., March 19, 1865. Educ. Suffolk Co. Pub. Sch. and Suffolk Col. Inst. Grad. M. D. Med. Col. Va. 1890. Brd. 1890. Elec. 1891. Late Sr. Res. Phys. Retreat for Sick, Richmond, Va. Present 1891, 7, 8, 1900, 3, 5, 7. Med. Exam. Penn. Mut., N. Y., N. W. Mut., Equit., and Union Cent. L. and Prov. Sav. Ins. Co. Mem. Sea. Med. Assn., Norfolk Med. Soc., Am. Med. Assn., and Al. Med. Col. Va.

Baird, Thompson M., Crewe, Nottoway Co., Va.—4.
B. Richmond, Va., July 11, 1868. Educ. A. B. Grad. M. D. Jeff. Med. Col. 1890. Brd. Sept., 1890. Elec. 1892. Mem. of Am. Med. Assn., of Sea. Med. Assn. Asst. Surg. U. S. Vols. Spanish-Amer. War. Surg. N. & W. R. R. Papers, several to Med. Jours. and to the Soc.

Baker, Benjamin May, Norfolk, Norfolk Co., Va.—2.
B. Petersburg, Va., Aug. 8, 1865. Educ. Univ. Va. Grad. M. D. Col. Phys. and Surg. N. Y., 1889. Brd. Sept., 1889. Elec 1889. Present 1889. Mem. Norfolk Med. Soc. Phys. to Norfolk City Prison.

Baker, Harvie Smith, Norfolk, Norfolk Co., Va.—2.
B. Nansemond Co., Va., Sept. 30, 1878. Educ. Suffolk Mil. Acad. and Randolph-Macon Col. Grad. M. D. Med. Col. of Va. 1904. Brd. June, 1905. Elec. 1905. House Phy. and Surg. to Norfolk Prot. Hospt., 1904-'05.

Baker, Sydney John, Manchester, Chesterfield Co., Va.—3.
Grad. M. D. Col. Phy. and Surg., Baltimore, 1890. Brd. March, 1890. Elec. 1904.

Baker, William Augustus, Big Stone Gap, Wise Co., Va.—9.
B. Jonesville, Va., April 4, 1863. Grad. M. D. Louisville Med. Col. 1891. Brd. June, 1904. Elec. 1906. Mem. S. W. Va. Med. Soc. Hlth. Offi. Lee Co. Surg. to L. & N. R. R. Co. Med. Exam. N. Y., Mut., Home and Equit. L. Ins. Cos.

Baldwin, Adrian, North Fork, Loudoun Co., Va.—8.
Grad. M. D. Louisville Med. Col., 1879. Elec. 1904.

Banner, Emory C., Coeburn, Wise Co., Va.—9.
Grad. M. D. Louisville (Ky.) Med. Col., 1896. Brd. Dec., 1904. Elec. 1907.

Baptist, Harry Lewis, Ivy Depot, Albemarle Co., Va.—7.
B. Jan. 9, 1874, Spotsylvania Co., Va. Educ. Oakland and Bowling Green Acads. Grad. M. D. Univ. of Md. 1897. Brd. May, 1895. Elec. 1900. Present 1900-08. Mem. Pied. Med. Soc. of Am. Med. Assn. Med. Ex. for Mut. Ben., Penn. Mut., and Trav. Life Ins. Cos Papers, Two Unique Cases of Obstetrics, 1902; Pneumonia, 1905.

Barham, Sydney B., Runnymede, Surry Co., Va.—4.
B. Surry Co., Va., May 31, 1838. Grad. M. D. Med. Col. Va. 1861. Elec. 1877. Present 1877, 1888, 1892, 8, 1904. Del. to Am. Med. Assn. 1877. Ex-Pres. Soc. Al. Med. Col. Va. 1891. Mem. Va. House of Del. till 1904.

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Barham, William Blount, Newsom's, Southampton Co., Va.—2.

B. Southampton Co., Va., Jan. 13, 1852. Educ. Randolph-Macon Col. Grad. M. D. Univ. Pa. 1877. Elec. 1877. Present 1891, 2, 4, 7, 8. Mem. Medico-Legal Soc., N. Y. Mem. Brd. Hlth., Southampton Co., Va. Papers for Soc., Report of Two Cases of Larrey's Shoulder-Joint Amputation, August, 1898.

Barker, William Carey, Buchanan, Botetourt Co., Va.—10.

B. Goochland Co., Va., Feb. 24, 1857. Educ. Richmond Col. Grad. M. D. Med. Col. Va. 1884. Elec. 1884. Present 1884, 5, 6, 8, 9, 1890. First Vice-Pres. Soc. Alumni Med. Col. Va. 1891-'92. Second Asst. Phys. Central State (Va.) Hosp. since 1887.

Barksdale, Charles Dudley, Sutherlin, Pittsylvania Co., Va.—5.

B. Brooklyn, Va., April 2, 1873. Educ. B. A. of Wash. and Lee Univ. 1892. Grad. M. D. Univ. Va, 1895. Brd. August, 1895. Elec. 1898.

Barksdale, Elisha, Lynchburg, Campbell Co., Va.—6.

Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1907.

Barksdale, George Edward, Richmond, Henrico Co., Va.—8.

B. Randolph, Va., Aug. 13, 1869. Educ. Pub. Schs. Grad. Ph. G. 1895 and M. D. 1899 of Univ. Col. of Med., Richmond. Brd. 1898. Elec. 1899. Present 1899, 1903-'08. Mem. Am. Med. Assn., Va. Phar. Assn., Richmond Acad. of Med. and Surg. Chm. Com. on Adulteration, Va. Phar. Assn. Del. to Con. for Revis. of U. S. P., 1900, Washington, D. C. Prof. of Bot. and aMt. Med., Univ. Col. of Med.

Barlow, Charles Holdsworth, Portsmouth, Norfolk Co., Va.—2.

B. Portsmouth, Va., August 20, 1877. Educ. Wm. and Mary Col. and Univ. of Va. Grad. M. D. Univ. of Va. 1900. Brd. Dec., 1900. Elec. 1902. Present 1902.

Barney, Jr., Joseph Nicholson, Fredericksburg, Spotsylvania Co., Va.—1.

B. Powhatan Co., Va., April 27, 1867. Educ. Pantops Acad., A. B. Hampden-Sidney Col., Va., 1888. Grad. M. D. Med. Col. Va., 1893. Brd. April, 1892. Elec. 1896. Present 1896, 1904. Mem. B. & O. R. R. Surg.'s Assn.; Rappahannock Val. Med. Assn.; on staff of Mary Wash. Hospt.; Hlth. Offl. and Phy. to Almshouse; Late Asst. Surg. 70th Reg. Va. Vols.; Mem. Brd. Vis. Med. Col. Va.

Barringer, Paul B., Blacksburg, Montgomery Co. Va. Res. Hon. Mem.—6.

Grad. M. D. Univ. Va. 1877, Univ. City, N. Y., 1878. Brd. 1890. Elec. 1890. Present 1892, 1906, 7, 8. Pres. 1906-'07; Elec. Hon. Mem. 1907. Ex-Prof. Phys. and Surg. Univ. Va. Mem. S. Surg. and Gynec. Assn. Ex-Mem. Va. State Brd. Hlth.

Barrow, Bernard, Barrow's Store, Brunswick Co., Va.—4.

B. Brunswick Co., Va., Dec. 15, 1874. Educ. Randolph-Macon Col. Grad. M. D. Univ. of Md. 1897. Brd. Dec., 1903. Elec. 1905. Mem. Med. and Chir. Fac. of Md.; of Southside Va. Med. Soc.

Baskerville, John Barbour, Dublin, Pulaski Co., Va.—9.

B. Newburn, Va., 1846. Educ. tutors and Univ. Acad. Grad. M. D. Univ. Pa. 1869. Elec. 1894. Present 1872. Mem. Roanoke Med. Soc.

Bates, Robley Dunglison, Newtown, King and Queen Co., Va.—1.

Educ. Aberdeen Acad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1906.

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Baughman, Greer, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Feb. 19, 1873. Educ. U. Va. Grad. M. D. Med. Col. Va. 1897. Brd. 1896. Elec. 1897. Present 1902, 3, 4, 5, 6, 8; V.-Pres. 1905-'06. Ex-Com. 1907-'08; Prof. Path., Bact. and Hist. Med. Col. Va.; Path. to Mem. Hospt.; Mem. Richmond Acad. Med. and Surg.; of Am. Med. Assn.; of S. Surg. and Gyn. Assn.; Asst. to Path. Inst., Wien, Externe, Leopold's Frauer Klinik, Dresden.

Baum, Orion, Vine, Princess Anne Co., Va.—2.
B. Prin. Anne Co., Va., Oct. 5, 1858. Educ. Va. Ag. and Mech. Col. Grad. M. D. Col. Phys. and Surg., Balt., 1884. Elec. 1889. Present 1889, 1890-'08. Mem. 9th Internat. Med. Cong.

Baxter, Enoch Wilson, Norfolk, Norfolk Co., Va.—2.
B. Currituck Co., N. C., April 5, 1861. Grad. M. D. Col. Phys. and Surg., Balt., 1887. Brd. April, 1888. Elec. 1888. Present 1888, 1890, 1, 8.

Baylor, William Edwin, Cedar Bluff, Tazewell Co., Va.—9.
Grad. M. D. Col. Phy. & Surg., Balto., 1883. Elec. 1904.

Beadles, Frank H., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va., 1894. Brd. April, 1893. Elec. 1897. Present 1898, 1908.

Beazley, Wyatt Sanford, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va., 1893. Brd. April, 1893. Elec. 1894.

Beckett, H. C., Scottsburg, Halifax Co., Va.—6.
B. Giles Co., Va., Aug. 21, 1851. Educ. Union H. Sch., W. Va., and Nat. Nor. Univ., Lebanon, O. Grad. M. D. Vand. Univ. 1884; Univ. Nashv. 1885. Elec. 1885. Present 1885-7-8-9, 1890-8-9. Post-Grad. Course Chicago Poly. 1893; Att. Senn's Clin. Mem. Am. Med. Assn. Lect. on Anat., Phys., and Hygiene Scottsburg Nor. Col. 1894-1901. Paper for Soc., Pneumonia, 1889; Fevers in So. Side Va., 1899.

Beckwith, Julian Ruffin, Petersburg, Dinwiddie Co., Va.—4.
B. Petersburg, Va., Jan. 10, 1873. Educ. Petersburg Univ. Sch. (McCabe), Univ. Va. Grad. M. D. Univ. of Va., 1899. Brd. June, 1903. Elec. 1905. Mem. Petersburg Med. Fac. Papers, Ulcers of Leg, Pet. Med. Fac., Feb., 1905.

Belew, Arthur Page, Edinburg, Shenandoah Co., Va.—7.
Educ. Edinburg Acad., and priv. tut. during war. Grad. M. D. Univ. Va., 1870. Elec. 1889. Surg. B. & O. R. R. Co.

Bell, William A., Winchester, Frederick Co., Va.—7.
Grad. M. D. Univ. Pa., 1873. Elec 1892. Present 1892-'98.

Belt, Humphrey Singleton, South Boston, Halifax Co., Va.—6.
Studied Med. Univ. of Va., 1890-'91. Grad. M. D. Univ. of Md., 1892. Brd. 1892. Elec. 1904.

Bennett, Coleman D., R. F. D., Chalk Level, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Aug. 7, 1873. Educ. Clifton Acad. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1905.

Bennett, Reuben William, Toshes, Pittsylvania Co., Va.—5.
B. Toshes, Va., Dec. 3, 1876. Educ. Stuart Nor. Col. Grad. M. D. Univ. Col. Med., Richmond, May, 1899. Brd. June, 1899. Elec. 1899.

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Bennett, Jr., Richard Alfred, Leesville, Campbell Co., Va.—6.
B. Toshes, Pittsylvania Co., Va., March 13, 1880. Educ. Clifton H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1905.

Bennett, William Wallace, Cologne, King and Queen Co., Va.—1.
B. Ashland, Va., Dec. 23, 1869. Educ. Randolph-Macon Col. Grad. M. D. Univ. Col. Med., Richmond, 1899. Elec. 1900.

Berger, Bertha Dalrymple, Staunton, Augusta Co., Va.—10.
B. Balto. Co., Md. Grad. M. D. Univ. S. Calif. 1903. Brd. June, 1907. Elec. 1908.

Berlin, Lewis, Norfolk, Norfolk Co., Va.—2.
B. Sept. 12, 1879. Grad. M. D. Col. of P. & S., Balto., 1901. Brd. June, 1901. Elec. 1901. Mem. Am. Med. Assn. Formerly Res. Phy. Bay View Asylum, Balto.

Beville, Richard P., Blackstone, Nottoway Co., Va.—4.
Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1902.

Bieldler, John Morgan, Harrisonburg, Rockingham Co., Va.—7.
B. Tenth Legion, Va., Dec. 24, 1873. Educ. W. Cent. Acad., Mt. Clinton, Va., and Poly. Inst., New Market, Va. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1905.

Biller, Allen Coverley, Forestville, Shenandoah Co., Va.—7.
B. Forestville, Va., Aug. 21, 1877. Educ. High School. Grad. M. D. Med. Col. Va., 1904. Brd. June, 1904. Elec. 1904.

Bishop, James John, R. F. D., Rocky Gap, Bland Co., Va.—9.
B. Clear Fork, Va., Dec. 3, 1867. Educ. Roanoke Col. Grad. M. D. Tenn. Med. Col., Knoxville, 1893. Brd. April, 1894. Elec. 1894. Present 1895. Phys. and Surg. Bland Co. Almshouse. Papers, Case of Gun-Shot Wound of Face and Neck, Va. Med. Mo., December, 1894.

Black, Alfred S., Muscogee, Muscogee Co., Okla.
Grad. M. D. Med. Col. Va. 1902. Brd. June, 1902. Elec. 1902.

Black, Allen J., Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Med. Col. Va. 1884. Elec. 1884. Present 1884.

Black, Kent, Blacksburg, Montgomery Co., Va.—6.
Grad. M. D. Med. Col. Va. 1878. Elec. 1878. Mem. Med. Exam. Brd. Va. 1890-92.

Black, Robert Alexander, Hot Springs, Bath Co., Va.—10.
B. Brooklyn, N. Y., 1860. Educ. Brook. Poly. and Col. Inst. Grad. M. D. Col. Phy. & Surg. 1883. Brd. Dec., 1905. Elec. 1907. Mem. Am. Med. Assn. Papers, Clinical Suggestions in Treatment of Prostatitis, 1907.

Blackwell, Karl Sigismund, Richmond, Henrico Co., Va.—8.
Grad. M. D. Univ. Col. Med. 1906. Brd. June, 1906. Elec. 1908.

Blair, John Robin, Churchville, Augusta Co., Va.—10.
B. Churchville, Va., July 2, 1883. Educ. Aug. Mil. Acad., Wash. and Lee Univ. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908. Present 1908.

Blair, John S., Churchville, Augusta Co., Va.—10.
Grad. M. D. Ky. School of Med. 1875. Elec. 1893.

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Bland, James Moncure, Boykins, Southampton Co., Va.—2.
B. Shacklefords, Va., April 3, 1882. Educ. Aberdeen and W. Point Acads. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1908. Mem. Am. Med. Assn.

Blankingship, Oliver F., Richmond, Henrico Co., Va.—3.
B. Chesterfield Co., Va., Feb. 10, 1865. Educ. Pub. Sch. Manchester, Va. Grad. M. D. Med. Col. Va. 1891. Brd. May, 1891. Elec. 1899. Present 1899, 1908. Mem. Richmond Acad. Med. and Surg. Formerly Adj. Prof. of Chem., Univ. Col. Med., Richmond. Papers, Tubercular Peritonitis and Salpingitis, 1898.

Blanton, Charles A., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1881. Elec. 1887. Present 1887, 1908.

Blanton, Joseph Clary, R. F. D. 5, Richmond, Henrico Co., Va.—3.
B. Cumberland Co., Va., Feb. 24, 1868. A. B. of Hamp.-Sidney Col. Grad. M. D. Med. Col. Va. May, 1900. Brd. June, 1900. Elec. 1901. Mem. Al. Assn., Med. Col. Va.

Bledsoe, Edwin Page, 203 Riegler Bldg., Little Rock, Ark.
B. Staunton, Va., Oct. 24, 1880. Educ. Wash. and Lee Univ. Grad. M. D. Col. Phy. & Surg., Balto., Md., 1905. Brd. June, 1906. Elec. 1906. 2d Asst. Phy. and Path. Cent. State (Va.) Hosp.

Bledsoe, Robert Garnett, Locust Grove, Orange Co., Va.—8.
B. Orange Co., Va., Sept. 17, 1868. Educ. Bowling Green Male Acad. Grad. M. D. Univ. Col. Med., Richmond, 1896. Brd. June, 1896. Elec. 1896.

Board, John James, Lynch Station, Campbell Co., Va.—6.
Grad. M. D. Jeff. Med. Col., Pa., 1880. Elec. 1907.

Bogle, James H., Roanoke, Roanoke Co., Va.—6.
B. Bland Co., Va., 1868. Grad. M. D. Col. P. & S., Balto., 1893. Brd. 1893. Elec. 1896. Mem. Brd. Hlth., Bland Co., Va.

Boland, Micajah, U. S. Navy Dept., Washington, D. C.
B. Lawyers, Va., Dec. 24, 1877. B. A. and M. A., Univ. of Va. Grad. M. D. Univ. Va. 1905. Brd. June, 1905; of N. Y. May, 1906. Elec. 1905. Interne Cent. State Hosp., Petersburg, Va., 1905, and L. I. State Hosp., Brooklyn, 1905-'06. Mem. Am. Med. Assn., of N. Y. State Med. Soc., of Dutchess Co. Med. Soc.; Commis. Asst. Surg. U. S. N. July, 1907.

Boldridge, James Barbour, R. F. D. 3, Culpeper, Culpeper Co. Va.—8.
Grad. M. D. Col. P. & S., Balto., 1893. Brd. April 1894. Elec. 1894.

Bolen, John W., Galax, Grayson Co., Va.—5.
B. Carroll Co., Va., Sept. 22, 1860. Educ. Hillsville (Va.) Acad. Grad. M. D. Med. Col. Va. 1885. Brd. 1885. Elec. 1901.

Bondurant, Thomas Lee, Garrett, Buckingham Co., Va. Res. Hon Mem.—10
B. Buckingham, Va., April, 1834. Educ. Hampden-Sidney and Princeton Cols. Grad. M. D. Univ. Va. 1857, and Univ. Pa. 1858. Elec. 1894. Hon. Mem. 1906. Asst. Surg. C. S. A.

Booker, Frank Eubank, Houston, Halifax Co., Va.—6.
Grad. M. D. Med. Col. Va. 1898. Brd. June, 1898. Elec. 1906.

Booker, Lyle Steele, Waynesboro, Augusta Co., Va.—10.
B. Waynesboro, Va., Sept. 23, 1883. Educ. Fishburn Mil. Acad. Grad. M. D. Univ. Col. Med. 1908. Brd. June, 1908. Elec. 1908. Present 1908. Sr. Res. Phy. Va. Hosp., Richmond, 1908-'09.

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Booker, Robert Eubank, Lottsburg, Northumberland Co., Va.—1.
B. Farnham, Va., Aug. 13, 1880. Educ. Farnham Acad. Grad. M. D. Univ. of Md. 1902. Brd. June, 1902. Elec. 1905. Mem. N. Neck Med. Assn., Sec'y Northumberland Co. Brd. Hlth.

Bosher, Lewis Crenshaw, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., 1860. Educ. Richmond Col. Grad. M. D. Med. Col. Va. 1883. Elec. 1883. Present 1883, 7, 1894, 7, 9, 1905, 6, 8. Mem. So. Surg. and Gyn. Assn.; Richmond Acad. Med. and Surg.; Am. Assn. of Obstet. and Gyn.; Am. Surg. Assn.; Am. Urol. Assn., and of Assn. of Am. Anat., Prof. Surg., Med. Col. Va.; Vis. Surg. Mem. Hosp.; Phys. St. Paul's Church Home for Children; Deputy Cor.

Bosher, Jr., Robert S., Richmond, Henrico Co., Va.—3.
B. Richmond, Va., 1874. M. A. and B. A. Univ. of Va. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1900.

Bott, William Nicholas, Blackwood, Wise Co., Va.—9.
B. Wolf Spring, Va., Sept. 1, 1880. Educ. High Sch. Grad. M. D. Hosp. Col. Med., Louisville, 1907. Brd. Dec., 1907. Elec. 1908. Surg. to Blackwood Coal & Coke Co., and Roaring Fork Ry. Co.

Boutelle, James Thacher, Hampton, Elizabeth City Co., Va.—1.
B. Cambridge, Mass., Jan. 6, 1845. A. B. Harvard Univ. 1867. Grad. M. D. Harvard Univ. 1871. Elec. 1875. Present 1881, 7. Mem. Harvard Med. Sch. Assn.; of Pen. Med. Soc., Hamp.; County (Eliz. City) Phys.; Cons. Phy. Hamp. Nor. Sch.; Surg. Dixie Hosp., Hampton; Ex. Surg. for Pens., U. S.; Dean Hamp. Train. Sch. for Nurses. Papers for Soc., Trephining in Epilepsy, Reports of Two Cases, 1894.

Bovee, John Wesley, The Rochambeau, Washington, D. C. Non-Res. Hon. Mem.
B. New York Dec. 31, 1861. Educ. High Schs. Grad. M. D. Med. Dept. Columbian Univ., D. C., 1885. Elec. Non-Res. Hon. Mem. 1897. Present 1897, 8, 9, 1900, 1, 2, 3, 4, 5, 6, 8. Mem. Amer. Med. Assn.; Amer. Gynec. Soc.; (and Ex-Pres.) of So. Surg. and Gyn. Soc.; Med. Soc. of D. C.; Med. Assn. of D. C.; (and Ex-Pres.) of Med. and Surg. Soc. of D. C.; Am. Urol. Assn.; Pres. Wash. Obstet. and Gyn. Soc.

Bowdoin, John W., Bloxom, Accomac Co., Va.—1.
Grad. M. D. Col. Phys. and Surg., Balto,, 1876. Elec. 1887.

Bowen, George M., Greenwood, Albemarle Co., Va.—7.
Grad. M. D. Med. Col. Va. 1852. Elec. 1882.

Bowen, Samuel Cecil, Tazewell, Tazewell Co., Va.—9.
B. Tazewell, Va., May 15, 1881. Educ. Hampden-Sidney Col. and Ohio State Univ. Grad. M. D. Med. Col. Va. 1905. Brd. Dec., 1906. Elec. 1907. Former Res. Phy. Mem. Hosp. Mem. Adj. Fac., Med. Col. Va.

Bowles, Richard C., Kent's Store, Fluvanna Co., Va. Res. Hon. Mem.—10.
B. Fluvanna Co. May 6, 1837. Educ. Richmond Col. Stud. Med. Univ. Va. 1859-'60; Summer Course, 1860, under Profs. T. Gaillard Thomas and Wm. R. Doneghe, N. Y., Univ. City N. Y., till Jan., 1861. Grad. M. D. Univ. Md. Mar., 1861. Elec. 1871. Hon. Mem. 1906. Att. Sess, seven. Asst. Surg. C. S. N. Papers, Nitrite of Amyl in Whooping Cough, Cancer of Liver.

Boyd, Jr., Philip W., Winchester, Frederick Co., Va.—7.
B. Winchester, Va., July 14, 1875. Educ. Shenandoah Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1899. Present 1899.

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Boykin, Anthony Read, Smithfield, Isle of Wight Co., Va.—2.
B. Isle of Wight Co., Va., Jan. 19, 1829. Educ. Amelia Acad. (W. H. Haines; Prin.). Grad. M. D. Univ. N. Y. 1860. Elec. 1898. Present 1898.

Bradshaw, Claude J., Carrsville, Isle of Wight Co., Va.—2.
Grad. M. D. Med. Col. Va. 1892. Brd. April, 1892. Elec. 1904.

Brady, Elliott Thomas, Abingdon, Washington Co., Va.—9.
B. Rockbridge Co., Va., Jan. 8, 1865. Educ. Wash and Lee Univ. Grad. M. D. Jeff. Med. Col. 1886. Brd. 1886. Elec. 1889. Present 1889, 1890-'1-'2-'3-'4-'6-'7-'8-'9, 1900-'2-'3-'4-'5-'6-'8. Mem. Am. Med. Assn.; S. W. Va.; Bristol Med. Socs. Ex-Rse. Hosp. Phys. Phila.; Int. Phila. Hosp. 1886. Mem. Med. Exam. Brd. Va. 1894-1909; Supt. Abing Hosp.

Bramblitt, William H., Pulaski, Pulaski Co., Va. Res. Hon. Mem.—9.
B. Bedford City, Va., 1829. Grad. M. D. Univ. City N. Y. 1857. Elec. 1871. Hon. Mem. 1906. Atten. Sess. 1871, and most all since. V.-Pres. 1879. Surg. C. S. Army. Papers for Soc., Scarlet Fever Epidemic, 1874. Other papers, Typhoid Fever, etc.

Brewer, Scott William D., Singer Glen, Rockingham Co., Va.—7.
B. Buckingham Co., Va., 1859. Educ. Randolph-Macon Col. and Univ. of Va. Grad. M. D. Med. Col. Va. 1885. Brd. April, 1885. Elec. 1886. Mem. Rockingham Med. Assn.; of Rockingham Co. Brd. of Hlth.; Med. Ex. Equit., N. Y. L. and N. Y. Mut. L. Ins. Cos. Won Thesis Prize at grad.

Briggs, Isham Keith, South Boston, Halifax Co., Va.—6.
B. Clarke Co., Va., Aug. 18, 1881. Educ. Clay Hill Acad. and Univ. of Va. Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1906. Present 1906-'8. Mem. S. Pied. Med. Soc. Med. Exam. Mo. State and Am. Nat. Life Ins. Cos.

Briggs, William Samuel, Dinwiddie, Dinwiddie Co., Va.—4.
Grad. M. D. Ky. Sch. of Med. 1890. Brd. June, 1894. Elec. 1903.

Bright, John Fulmer, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., 1877. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1898. Elec. 1899.

Bristow, Henry Bernard, Tappahannock, Essex Co., Va.—1.
B. Urbanna, Va., Feb. 7, 1879. Educ. West Point (Va.) Mil. Acad. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1904. Elec. 1905.

Broaddus, William L., Bowling Green, Caroline Co., Va.—1.
Elec. 1872. Mem. Med. Ex. Brd. Va. from Jan., 1893.

Brock, Charles Bolton, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1894. Brd. April, 1894. Elec. 1897. Present 1898, 1908. Asst. Phys. E. State (Va.) Hosp., 1896-'97.

Brock, Charles William Penn, Richmond, Henrico Co., Va. Res. Hon. Mem.—3.
B. Augusta Co., Va., June 1, 1836. Educ. Univ. Va. Grad. M. D. Med. Col. Va. 1859. Elec. 1871. Hon. Mem. 1906. Present 1875-'6-'7-'8, 1886,-'7-'8, 1894-'9, 1904-'8. V.-Pres. 1876. Ex-Pres. Rich'd Med. & Surg. Soc.; of Assn. Al. Med. Col. Va., of Nat. Assn. Ry. Surg., 1893. Chief Surg. C. & O. R. R. Surg. C. S. Army. Chief Surg. Major-Gen. J. L. Kemper's Com. Papers, Morphinic and True Tetanus.

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Brodnax, John Wilkins, Manchester, Chesterfield Co., Va.—3.
Grad. M. D. Med. Col. Va. 1891. Brd. 1891. Elec. 1893. Present 1894, 1908. Lect. and Dem. Anat. Univ. Col. Med., Richmond. Coroner Manchester.

Brooker, Boyce Duncan, Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. of Ga. 1881. Elec. 1899. Present 1899, 1908.

Brooks, Frederick M., Swetnam, Fairfax Co., Va.—8.
B. Fairfax Co., Va., Dec. 23, 1858. Grad. M. D. Univ. Pa. 1883. Elec. 1891. Present 1892. Papers for Soc., Some Remarks on the Continued Administration of Digitalis, 1892.

Brooks, Vernon Asbury, Portsmouth, Norfolk Co., Va.—2.
B. Mathews Co., Va., July 12, 1882. Educ. Grad. of Portsmouth H. Sch. 1900. Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1904. Present 1904. Sen. Res. Phy. Retreat for Sick, Richmond, Va., 1904-'05. Chief of Clin. to Chair Genito-Urin. Surg., Univ. Col. Med., Richmond, Va., 1904-'05.

Brower, Charles Ford, Gainesville, Prince William Co., Va.—8.
Grad. M. D. Jeff. Med. Col., Phila., March 13, 1879. Elec. 1894.

Brown, Jr., Alexander Gustavus, Richmond, Henrico Co., Va.—3.
B. Ashland, Va., Aug. 31, 1873. Educ. Randolph-Macon Col. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. 1897. Elec. 1899. Present 1899, 1908. Mem. Rich. Acad. of Med. and Surg., Am. Med. Assn., Am. Assn. Adv. of Sci. Inst. in Anat. and Asst. to Chair Clin. Med,, 1899-1900. Prof. Theo. and Prac. of Med., Univ. Col. of Med., Richmond. Res. Phy. City (Richmond) Alms. Hosp., 1898, 9.

Brown, Benjamin, Nokesville, Prince William Co., Va.—8.
B. Amherst C. H. Dec. 24, 1877. Educ. Va. Poly. Inst. Grad. M. D. Med. Col. Va. 1899. Brd. June, 1904. Elec. 1908. Mem. Brd. of Hlth. Pr. Wm. Co., Va.

Brown, Edward W., Washington, Rappahannock Co., Va.—7.
Grad. M. D. Col. Phys. and Surg., Balt., 1881. Elec. 1891.

Brown, George W., Saluda, Middlesex Co., Va.—1.
Grad. M. D. Col. Phys. and Surg., Balt., 1893. Brd. 1894. Elec. 1894.

Brown, Israel, Norfolk, Norfolk Co., Va.—2.
B. Newberry, S. C., July 28, 1873. Ph. B. of Newberry Col. Grad. M. D. S. C. Med. Col. 1894. Brd. May, 1895. Elec. 1900. Present 1900. Mem. Norfolk Med. Soc. and of Sea. Med. Assn. Papers, Some Remarks on Ethics, Sea. Med. Assn., 1899.

Brown, James G., Woodville, Rappahannock Co., Va.—7.
Grad. M. D. Univ. of Pa. 1889. Brd. 1890. Elec. 1891.

Brown, Ralph Waddell, Roanoke, Roanoke Co., Va.—6.
B. Anderson, S. C., July 9, 1867. Educ. Anderson Mil. Acad. & Univ. Va. Grad. M. D. Univ. of N. Y. 1889 and Univ. of Va. ——. Brd. April, 1893. Elec. 1903. Treas. Roanoke Med. Soc. Papers, Report of a Case of Gunshot Wound of the Abdomen, with Injury of the Intestines—Abdominal Section—Recovery, 1898.

Brown, Samuel Elkan, 228 Church Street, Norfolk, Norfolk Co., Va.—2.
B. Newberry, S. C., May 23, 1882. Educ. Norfolk High School and Univ. of Va. Grad. M. D. Univ. of Va. 1905. Brd. June, 1905. Elec. 1905. Post-Grad. work N. Y .1905-'06.

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Browning, Edgar R., Flint Hill, Rappahannock Co., Va.—7.
Grad. M. D. Univ. of Md. April, 1895. Brd. May, 1895. Elec. 1897.

Bruin, Mackall R., Strasburg, Shenadoah Co., Va.—7.
Grad. M. D. Univ. of Md., Balto., 1895. Brd. 1895. Elec. 1902.

Brumfield, William Andrew, Keeling, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., May 26, 1875. Educ. Pub. Schs. Grad. M. D. Univ. of Va. 1897. Brd. June, 1897. Elec. 1903. Med. Ex. Penn. Mut., Union Cen., N. Y. and Mut. L. Ins. Cos.

Brunk, Oliver Curry, Williamsburg, James City Co., Va.—3.
Grad. M. D. Univ. of Va. 1903. Brd. June, 1903. Elec. 1903. Supt. E. State (Va.) Hosp. 1907-'09.

Bryan, Robert C., Richmond, Henrico Co., Va.—3.
B. Henrico Co., Va., June 27, 1873. Educ. Univ. of Va. Grad. M. D. Col. Phy. & Surg. N. Y. 1899. Brd. Nov., 1899. Elec. 1903. Adj. Prof. Gen.-Urin. Dis. Univ. Col. of Med., Richmond. Translated Functional Diagnosis of Kidney Diseases, Cooper & Richtre, Berlin—pub-by Blakiston, Son & Co., Phila.

Bryant, James F., Franklin, Southampton Co., Va.—2.
Grad. M. D. Univ. City of N. Y. 1867. Elec. 1872.

Buchanan, James David, Eilendale, Smyth Co., Va.—9.
B. Va. Educ. Emory and Henry Col. Grad. M. D. Bellevue Hosp. Med. Col. 1892. Brd. 1892. Elec. 1892. Present 1892. Clin. Asst. S. W. State (Va.) Hosp., 1892-'93. Mem. Smyth Co. Brd. Hlth.; of S. W. Va. Med. Soc.

Buckner, Leigh, Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Med. Dept. Univ. of Md. 1885. Brd. 1886. Ex-Mem. Med. Ex. Brd. Va.

Bull, Jr., Charles Pinckney, 17 Doughty Street, Charleston, Charleston Co., S. C.
B. N. Y. City March 20, 1874. Educ. Leal's School, Plainfield, N. J. Grad. M. D. Med. Col. St., S. C., 1905. Brd. Dec., 1907. Elec. 1908. Instr. Med. Chem. Med. Col. St., S. C. Alum. Hospt. Rup. and Crippled, and of St. Mary's Free Hosp. for Child., N. Y. City. Papers, Still's Dis., 1906. Meth. of Recording Amt. Displacement in Weak Foot, 1906. Dem. of Meth. for Weighing Patients in Bed, 1907.

Bullard, Irene Ballou, Williamsburg, James City Co., Va.—3.
B. Snowville, Va., 1876. Educ. Farmville Nor. Sch. Grad. M. D. Univ. of Mich. 1903. Brd. June, 1903. Elec. 1903.

Bunting, Charles Henry, Madison, Dane Co., Wis.
B. La Crosse, Wis., 1875. B. Sc. Univ. of Wis. 1896. Grad. M. D. Johns Hopkins Univ., 1901. Brd. Dec., 1906. Elec. 1907. Memb. Pied. Med. Soc.; of Assn. Am. Anat.; of Am. Assn. Path. and Bact.; of Soc. for Expt. Biol. & Med. Asst. Dem. of Path. Univ. of Pa. 1902-'03. Assoc. in Path. Johns Hop. Univ. 1903-'06. Prof. Path. Univ. of Va. 1906-'08 and Univ. Wis. 1908-'09.

Burfoot, Archibald McDowell, Fentress, Norfolk Co., Va.—2.
B. Columbia, N. C. Grad. Atlantic Col. Inst., Eliz. City, N. C. Grad. M. D. Balto. Med. Col. 1906. Brd. Dec., 1906. Elec. 1907. Mem. Sea. Med. Assn.; of Al. Assn. Balt. Med. Col. Exem. Nat. L. (Vt.) Fid., Mut. L. Ins. Cos. Mason, Odd-Fel., Surg. N. & S. Ry.

Burgess, Richard Urquhart, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., Oct. 29, 1872. Educ. William and Mary Col. Grad. M. D. Med. Col. Va. April, 1895. Brd. April, 1895. Elec. 1895. Present 1898.

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Burke, Joseph M., Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Med. Col. Va. April, 1895. Brd. April, 1894. Elec. 1895.

Burke, Madison Otey, Richmond, Henrico Co., Va.—3.
B. Meridianville, Ala., March 23, 1867. Educ. and titles A. B. of Univ. of Ala. 1886. Grad. M. D. Med. Dept. Tulane Univ., La., 1891. Brd. April, 1891. Elec. 1901.

Burke, Thomas G., Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Ala. Med. Col. 1902. Brd. June, 1908. Elec. 1908.

Burkholder, Alexander Joseph, Mount Sidney, Augusta Co., Va.—10.
B. Mt. Clinton, Va., Dec. 10, 1860. Educ. Hoover's High Mil. Sch. Grad. M. D. Balto. Univ. Sch. of Med. 1889, and Post-Grad. 1902. Grad. Dr. of Vet. Sci. Univ. of N. Y. 1893. Brd. July, 1902. Elec. 1905. Mem. Augusta Co. Med. Soc.; of Am. Assn. Comp. Sci. Papers, Diagnostic Value of Pulse; Tuberculosis; Report of Original Research Work; Identity Existing in Man and Lower Animals.

Burks, David Cabell, Sherwood, Rockbridge Co., Va.—10.
B. Sherwood, Va., 1871. Educ. High Sch. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1905.

Burks, John Charles, Roanoke, Roanoke Co., Va.—6.
B. Buffalo Forge, Va., Feb. 28, 1873. Educ. Fancy Hill Acad. Grad. M. D. Med. Col. Va. 1897. Brd. Sept., 1896. Elec. 1897. Surg. Rebekah Sanitarium (Roanoke, Va.).

Burton, Samuel H., Parnassus, Augusta Co., Va.—10.
B. Broadway, Rockingham Co., Va., Feb. 4, 1873. Educ. Pub. Schs. and Shenandoah Nor. Col. Grad. M. D. Univ. of Va. 1897. Brd. June, 1897. Elec. 1899.

Burwell, Henry L., Chase City, Mecklenburg Co., Va.—4.
Grad. M. D. Ky. School of Med. 1879. Elec. 1885.

Burwell, William Meade, Chincoteague, Accomac Co., Va.—1.
B. Floyd Co., Va., May 7, 1866. A. M. Roanoke Col., Salem, Va. Grad. M. D. Med. Col. Va. 1895. Brd. May, 1895. Elec. 1897. Mem. Am. Med. Assn.

Busey, Charles Edgar, Lynchburg, Campbell Co., Va.—6.
B. Va. 1853. Educ. Morgan Acad. and Pub. Sch. Grad. M. D. Md. Surg. Col. 1877. Col. Phy. and Surg., Balt., 1878. Post-Grad. 1883. Elec. 1885. Resigned 1897. Re-elected 1900. Chm. Com. of Arrang. Lynchburg 1891 and 1901. Mem. Lynch. Acad. of Med. Papers for Soc., Cultivation of Vocal Music as a Means of Preventing Phthisis, 1888.

Butler, William W. S., Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Univ. Md. 1881. Elec. 1904.

Buxton, Joseph T., Newport News, Warwick Co., Va.—1.
Grad. M. D. Univ. of Pa., Phila., 1897. Brd. June, 1899. Elec. 1902.

Byrd, A. M., R. F. D. 2, Chilhowie, Smyth Co., Va.—9.
Grad. M. D. Med. Col. Va. 1898. Brd. June, 1899. Elec. 1904.

Caldwell, Birnie Roscoe, New Castle, Craig Co., Va.—9.
B. Simmonsville, Va., Dec. 22, 1877. Educ. at New Castle Inst. and V. M. I. Grad. M. D. Univ. of South 1901. Brd. 1901. Elec. 1902. Present 1902.

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Caldwell, John K., Ethelfelts, Carroll Co., Va.—5.
B. Oldtown, Va., March 24, 1873. Educ. Stuart Nor. and Woodlawn Cols. Grad. M. D. Med. Col. Va. 1899. Brd. June, 1899. Elec. 1899.

Call, Manfred, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Dec. 17, 1876. Grad. M. D. Med. Col. Va. Brd. June, 1899. Elec. 1899. Present 1899, 1908.

Callaway, George Carrington, Norwood, Nelson Co., Va.—10.
Grad. M. D. Col. of Phy. & Surg., Balto., 1876. Elec. 1904.

Camm, Frank, Lynchburg, Campbell Co., Va.—6.
B. Manchester, Va., Feb. 28, 1848. Educ. Wm. and Mary Col. Stud. Med. Univ. Va. Grad. M. D. Univ. Md. 1885. Elec. 1886. Present 1888, 1890, 1891.

Campbell, F. L., Jeffersonton, Culpeper Co., Va.—8.
Grad. M. D. Col. Phys. and Surg. 1891. Brd. 1891. Elec. 1892.

Campbell, Hawes, Enfield, King William Co., Va.—3.
B. Enfield, Va., 1873. B. S., Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1899. Present 1899, 1908.

Campbell, Malcolm, Abingdon, Washington Co., Va.—9.
Grad. M. D. Med. Col. Va. 1901. Brd. June, 1901. Elec. 1904.

Campbell, Walker Aylett, Old Church, Hanover Co., Va.—3.
B. Enfield Va., Sept. 15, 1875. Educ. Wm. & Mary Col. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1904. Mem. Co. (Hanover) Brd. of Hlth.

Cannaday, Albert Asa, Roanoke, Roanoke Co., Va.—6.
B. Va. 1863. Educ. Roanoke Col., Va. Grad. M. D. Univ. and Bellevue Hosp. Med. Col. 1888. Brd. 1888. Elec. 1888. Resigned 1898. Re-elected 1901. Mem. Am. Med. Assn.

Cannaday, Charles Graham, Roanoke, Roanoke Co., Va.—6.
B. N. C. Nov. 22, 1860. Educ. Floyd Acad., Va. Prac. since 1881. Grad. M. D. St. Louis Col. Phys. and Sur. 1889. Elec. 1889. Present 1889, 1897, 8, 1903.

Cannaday, Dexter P., Floyd, Floyd Co., Va.—5.
B. Floyd Co., Va., Dec. 27, 1877. Educ. Salem H. Sch. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1906. Elec. 1906. Mem. W. Va. State Med. Assn. of Kanawha Co. (W. Va.) Med. Soc.

Cannaday, John Egerton, Charleston, Kanawha Co., W. Va.
B. Floyd, Va., March 17, 1873. Educ. Roanoke Col. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1901. Present 1904, 5, 6. Int. St. Luke's Hosp. (Richmond) 1901-2. Mem. Med. Soc. W. Va., of Am. Med. Assn., of Am. Assn., of Obstet. and Gyn. of S. Surg. and Gyn., and Miss. Val. Med. Assn.; Ex. Supt. and Surg. Shelt. Arms Hosp. (W. Va.)

Carnahan, John D., Ogden, Weber Co., Utah.
B. Tazewell C. H., Va., 1847. A. M. Roanoke Col., Va. Grad. M. D. Univ. Va. 1872. Elec. 1874. Att. Sess. two.

Carr, George Hopkins, Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., May 8, 1875. Educ. Portsmouth H. Sch. Grad. M. D. Univ. of Md. April 15, 1896. Brd. June, 1896. Elec. 1899. Mem. Sea. Med. Soc. City Phy. Portsmouth. Phy. Exam. Y. M. C. A. Gym.

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Carr, Robert Patrick, Norton, Wise Co., Va.—9.
B. Tazewell, Tenn., Aug. 4, 1877. Educ. Univ. of Tenn. Grad. M. D. Univ. of Louisville, Ky., 1904. Brd. June, 1904. Elec. 1905. Mem. S. W. Va. and Wise Co. Med. Socs. Interne City (Louisville) Hosp. Med. Exam. nearly all big L. Ins. Cos.

Carr, Wallace Deane, Richmond, Henrico Co., Va.—3.
B. Balto., Md., Aug. 19, 1875. Educ. McGuire's Univ. Schl. Grad. M. D. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908.

Carr, William Phillips, 1418 L Street, N. W., Washington, D. C.
B. Boydton, Va., 1858. Grad. M. D. Columbian (now Geo. Wash.) Univ. 1888. Elec. 1898. Present 1898, 9, 1904, 5, 8. Mem. Med. Soc. D. C. (and Pres. 1896); of Med. Assn. D. C.; of Med. and Surg. Soc. D. C.; of Gyn. and Obstet. Soc. D. C.; of Assn. Amer. Anat.; of Amer. Med. Assn., S. Surg. and Gyn. Assn., Prof. Phys. Col. Univ. Coroner, V.-Pres. Al. Assn., Col. Univ. Com. Phar., D. C.

Carrington, Charles Venable, Richmond, Henrico Co., Va.—3.
B. Charlotte Co., Va., July 29, 1866. Educ. tutors and U. Va. Grad. M. D. Univ. Va. 1889. Brd. 1890. Elec. 1890. Present 1892, 1908. Mem. Richmond Acad. Med. and Surg. Res. Phys. Alleghany Springs, Va., 1891-'92. Adj. Prof. Clin. Surg. Univ. Col. of Med., Richmond.

Carroll, Jr., John Wesley, Lynchburg, Campbell Co., Va.—6.
B. Lynchburg, Va., Aug. 25, 1879. Grad. M. D. Univ. of Va. 1901. Brd. June, 1901. Elec. 1905. Mem. Lynchburg Acad. of Med. Med. Exam. Met. L. Ins. Co.

Carson, Henry Clay, Sugar Grove, Smyth Co., Va.—9.
Grad. M. D. Col. Phy. & Surg., Balto., 1892. Brd. Oct., 1893. Elec. 1904.

Carter, Benjamin L., Blue Spring Run, Alleghany Co., Va.—10.
B. Sweet Chalybeate Springs, Va., Nov. 17, 1865. Educ. Wm. and Mary Col. Lect. at Med. Col. Va. Grad. M. D. Balto. Med. Col. 1893. Brd. April, 1893. Elec. 1901. Present 1901. Med. Exam. Equit. L. Assur. Soc., N. Y.

Carter, Charles Thomas, Danville, Pittsylvania Co., Va.—5.
B. Danville, Va., July 29, 1875. B. A. Danville Mil. Inst. 1893. Grad. M. D. Univ. Col. Med., Richmond, April, 1897, and N. Y. Poly. 1899. Brd. July, 1897. Elec. 1898. Mem. Al. Assn. Univ. Col. of Med.

Carter, Chesley Lanier, Chatham, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Jan., 1877. Educ. H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1904. Sect. and Treas. Pitt. Co. Med. Soc.

Carter, Durus Desmus, Woodstock, Shenandoah Co., Va.—7.
B. Hancock, Md., April 25, 1847. Educ. Johnson & Neil's Sch. Grad. M. D. Jeff. Med. Col. 1868. Elec. 1887. Moved from State and dropped 1898. Re-elect. 1904. Del. Am. Med. Assn. 1893. Hlth. Offi. Woodstock ten years.

Carter, Garland H., Boydton, Mecklenburg Co., Va.—4.
Grad. M. D. Med. Col. Va. April, 1893. Brd. April, 1893. Elec. 1897.

Carter, George W., Delta, York Co., Pa.
Grad. M. D. Univ. of Md. 1878. Elec. 1882.

Carter, Henry Poindexter, McKenney, Dinwiddie Co., Va.—4.
Grad. M. D. Univ. of Md. 1903. Brd. June, 1903. Elec. 1905.

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Carter, Henry R., Ashland, Hanover Co., Va.—3.
Grad. M. D. Univ. Col. of Med., Richmond, 1897. Brd. June, 1902. Elec. 1902.

Caskie, James Maxwell, Remington, Fauquier Co., Va.—8.
B. Richmond, Va., 1860. Educ. Va. Poly. Inst. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1880. Elec. 1906. Present 1906. Mem. Am. Med. Assn.

Cassiday, Ferris Town, Fredericksburg, Spotsylvania Co., Va.—1.
B. Atlanta, Ga., Oct. 15, 1879. Educ. Anderson's H. Sch. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905.

Catlett, John B., Staunton, Augusta Co., Va.—10.
Grad. M. D. Univ. of Va. 1888. Brd. 1889. Elec. 1889.

Caton, William Preston, Accotink, Fairfax Co., Va.—8.
B. Alexandria, Va., Sept. 10, 1872. A. B. of W. Md. Col. Grad. M. D. Univ. of Med. 1896. Brd. June, 1899. Elec. 1900. Mem. Rappahannock Val. Med. Assn.

Catts, Samuel Rozier, Clifton Station, Fairfax Co., Va.—8.
B. Fairfax Co., Va., Sept. 19, 1877. Educ. Fairfax Pub. Schls., Pot. Acad., Alex. and Spen. Col., D. C. Grad. M. D. Balto. Med. Col. 1906. Brd. June, 1908. Elec. 1908. Mem. Fair. Co. Med. Soc.

Causey, Peter Prentis, Burgaw, Pender Co., N. C.
B. Suffolk, Va., Nov. 16, 1872. Educ. Suffolk Mil. Acad. and Locust Dale Acad. Grad. M. D. Univ. of Md., Balto., 1897. Brd. June, 1897. Elec. 1902. Mem. Sea. Med. Soc.

Chaffin, William Wamach, Pulaski, Pulaski Co., Va.—9.
B. Wythe Co., Va., May 5, 1868. Educ. Wash. and Lee Univ., Va. Grad. M. D. Jeff. Med. Col. 1893. Brd. Oct., 1893. Elec. 1893. Present 1893, 4, 6, 7, 8, 1903, 8. Mem. Pulaski Co. Med. Soc. Asst. Surg. N. and W. R. R. Surg. Pulaski Iron Co. Elec. Mem. Va. State Brd. Hlth. 1904.

Chapman, Thomas E., Norton, Wise Co., Va.—9.
Grad. M. D. Ky. Univ. 1904. Brd. June, 1906. Elec. 1906.

Chelf, Hugh Tucker, Culpeper, Culpeper Co., Va.—8.
B. Culpeper July 28, 1867. Grad. M. D. Univ. of Va. 1888. Jeff. Med. Col., Phila., 1889. Brd. spring 1889. Elec. 1893. Atten. Sess. one. Res. Phys. St. Luke's Home, Richmond, Va.

Cherry, T. M., Norton, Wise Co., Va.—9.
B. New Plymouth, Ohio, Feb. 12, 1862. Grad. M. D. Col. Phy. & Surg., Balto., 1891. Brd. 1891. Elec. 1904. Mem. Wise Co. Med. Soc., of S. W. Va. Med. Soc.

Chewning, William Jeffries, Fredericksburg, Spotsylvania Co., Va.—1.
B. Fredericksburg, Va., April 29, 1877. Educ. Fred. Col. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. May, 1900. Elec. 1904. Secty. Rap. Val. Med. Soc. H. Surg. Va. Hosp. 1900-'01. Res. Phy. W. Sul. Springs 1901-'02. Papers, Infant Feeding, Treatment of Appendicitis, Some Original Thoughts as to Treatment of Typhoid Fever. Some Practical Uses of X-Ray in Diag.

Chiles, Joseph Haskell, Oviedo, Orange Co., Fla.
B. Greenville, Fla. Educ. Univ. of Fla. Grad. M. D. Univ. Col. of Med., Richmond, 1905. Brd. June, 1905. Elec. 1906.

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Chinn, George Edward, Norfolk, Norfolk Co., Va.—2.
B. Fayette, Mo., July 26, 1878. B. S. & M. S. Grad. M. D. Johns Hopkins Univ. 1903. Brd. June, 1904. Elec. 1904. Mem. Norfolk Co. Med. Soc.

Chinn, Walter Neal, Hague, Westmoreland Co., Va.—1.
B. Richmond Co., Va., Dec. 30, 1871. Grad. M. D. Med. Col. of Va. 1901. Brd. June, 1901. Elec. 1901.

Chitwood, William T., Rocky Mount, Franklin Co., Va.—5.
B. Franklin Co., Va., 1869. Educ. high schools Franklin and Patrick Cos. Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. May, 1897. Elec. 1901. Exam. N. W. Mut. L. Ins. Co.

Christian, William Gay, Gordonsville, Orange Co., Va.—8.
B. Buckingham Co., Va., Oct. 27, 1862. Educ. Kenmore, Amherst Co., Va. Grad. M. D. Univ. of Va. 1889. Brd. Sept., 1889. Elec. 1893. Present 1893-4. Demon. Anat. Univ. of Va. Oct., 1889. Prof. Anat. and Operative Surg., 1894.

Christian, Wm. Stephen, Urbanna, Middlesex Co., Va. Res. Hon. Mem.—1.
Grad. M. D. Jeff. Med. Col. 1851. Elec. 1886. Hon. Mem. 1905. Present 1887-8, 1902-3-5. Orator, 1888, 1903. Ex-Mem. Med. Ex. Brd. Va. Pres. Med. Soc. Va. 1904-5.

Chumbley, Robert E., Belspring, Pulaski Co., Va.—9.
B. Churchwood, Va., 1873. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. 1898. Elec. 1901. Present 1901.

Claiborne, John Herbert, 39 W. 36th St., New York, N. Y.
B. Louisburg, N. C. Educ. Univ. Va. Grad. M. D. Univ. Va. 1883. Elec. 1887. Present 1887, 1896. Mem. N. Y. Acad. Med. Lect. Ophthal., N. Y. Poly. Papers for Soc., Iritis, 1890; Otitis Furunculosis, 1891; Acute Inflammatory Earache, 1902. Author of "Theory and Practice of Ophthalmoscopy." Several papers in various journals.

Clark, Bruce, Delton, Pulaski Co., Va.—9.
Grad. M. D. Col. Phy. & Surg., Balto., 1890. Practiced prior to Brd. of Exam. Elec. 1904.

Clark, James Turner, Mount Solon, Augusta Co., Va. Res. Hon. Mem.—10.
B. Waynesboro, Va., March 25, 1820. Stud. Med. Jeff. Med. Col., Phila., Pa., 1856-7. Elec. 1903. Hon. Mem. 1906. Mem. Med., Dent., and Gen'l Sci. Soc. of Augusta Co. and of old Co. Soc. Papers to several journals, titles forgotten. Detailed Asst. Surg. by Confed. Authorities, battles of Manassas, and continued during the war.

Clark, John Paulett, Lynchburg, Campbell Co., Va.—6.
B. Hat Creek, Va., April 2, 1870. Educ. Hampden-Sidney Col. Grad. M. D. Univ. Va. June 17, 1896. Brd. June, 1896. Elec. 1897.

Clark, John S., Ivanhoe, Wythe Co., Va.—9.
Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1904.

Clarkson, Henry Mazyck, Haymarket, Prince William Co., Va. Res. Hon. Mem.—8.
B. Charleston, S. C., 1835. Educ. B. A. of S. C. Col. 1855, and A. M. 1856. Grad. M. D. Univ. Pa. 1859. Elec. 1879. Hon. Mem. 1906. Present 1879, 1883-4-5-6-7-8. Orator, 1885. First V.-Pres. 1888. Chm. Com. of Nom. 1887-8. Mem. N. E. Va. Med. Soc., Pen. Med. Soc. Asst. Surg, then Surg. C. S. Army. Act. Asst. Surg. U. S. M. Hosp. Serv. Div. Supt. Schs. 1892-1909.

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Claud, Edward Hobsay, Portsmouth, Norfolk Co., Va.—2.
B. Southampton Co., Va., 1874. Educ. Norfolk Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. July, 1899. Elec. 1901. Mem. Norfolk Med. Soc.

Clemmer, Charles Augustus, Middlebrook, Augusta Co., Va.—10.
B. Augusta Co., Va., 1881. Educ. Hampden-Sidney Col. Grad M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1908. Present 1908. Mem. Tri-Co. Med. Assn. W. Va., St. Med. Assn. of W. Va.

Cline, Harry C., Front Royal, Warren Co., Va.—7.
B. Front Royal, Va., Nov. 16, 1844. Educ. Front Royal Acad.; Roanoke Col. Grad. M. D. Univ. of Md. 1876. Elec. 1889. Att. Sess. two.

Clore, Jesse N., Madison, Madison Co., Va.—7.
B. Madison, Va., 1869. Educ. Locust Dale Acad. Grad. M. D. Med. Col. Va. 1895. Brd. May, 1895. Elec. 1905. Mem. Pied. Med. Soc.; Secty. Co. (Madison) Brd. Hlth.; Ex-Phy. Almshouse. Med. Exam. N. Y. Mut.; Equit.; N. W. Mut.; Home, and Ger. L. Ins. Cos.

Cobb, Edward Chisholm, Penola, Caroline Co., Va.—1.
B. Caroline Co., Va., April 27, 1876. Educ. Bowling Green Acad., Richmond Col. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Present 1899. Res. Phy. Retreat for Sick, Richmond.

Cobb, Richard H., Franklin, Southampton Co., Va.—1.
Grad. M. D. Memphis Hosp. Med. Col. 1883. Elec. 1884.

Cobbs, Walter Herbert, Lebanon Church, Shenandoah Co., Va.—7.
B. Callands, Pittsylvania Co., Va., 1882. Educ. High Sch. and Va. Poly. Inst. Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908. Present 1908.

Cochran, Jr., Frederick Albert, Clearbrook, Frederick Co., Va.—7.
B. Frederick Co., Va., Feb. 26, 1874. B. S. Shen. Inst., 1893. Grad. M. D. Jeff. Med. Col., Pa., 1896. Brd. June, 1899. Elec. 1906. Mem. Fred. and Clarke Co. Med. Soc.

Cocke, George Washington, Danville, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Dec., 1861. Educ. Clifton Acad., Va., Yadkin Col., N. C. Grad. M. D. Col. Phys. and Surg., Balto., March, 1885. Brd. April, 1885. Elec. 1885. Resigned. Re-elected 1898. Present 1888, 1898.

Cockrell, Loren Eugene, Reedville, Northumberland Co., Va.—1.
B. Northumberland Co., Va., May 5, 1870. Educ. Randolph-Macon Col. Grad. M. D. Univ. Md. 1895. Brd. May, 1895. Elec. 1896. Present 1898. Clin. Instr. Univ. Hosp. 1894-5.

Coffman, William Harnsberger, Richmond, Henrico Co., Va.—3.
B. Linville, Va., May 26, 1864. Grad. M. D. Col. Phy. & Surg., Balto., Md., 1884. Pract. Med. in Va. prior to State Brd. Elec. 1907. Papers for Soc., General Management of Cases of Tuberculosis, 1907; other papers, numerous.

Colbert, Oscar R., Warrenton, Fauquier Co., Va.—8.
Grad. M. D. Col. Phy. & Surg., Balto., 1885. Practiced prior to Brd. of Exam. Elec. 1904.

Cole, Howson White, Danville, Pittsylvania Co., Va.—5.
B. Pittsylvania Co. Dec. 11, 1830. Educ. Caldwell Inst., Emory and Henry Col. Grad. M. D. Jeff. Med. Col. 1854. Elec. 1871. Present 1880.

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Coleman, Claude C., Buena Vista, Rockbridge Co., Va.—10.
B. Caroline Co., Va. Educ. Pub. Sch. and Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1903. Present 1903.

Coleman, Daniel J., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1884. Elec. 1884. Present 1887, 1908.

Coleman, Howe R., Collierstown, Rockbridge Co., Va.—10.
B. Welch's, Va., Oct. 21, 1872. Educ. Cook's Col., Waynesboro, Va. Grad. M. D. Med. Col. Va., April, 1898. Brd. June, 1898. Elec. 1898. Res. Phys. Old Dom. Hosp., 1898.

Coleman, William J., Mineral, Louisa Co., Va.—8.
B. Spotsylvania Co., Va., 1856. Educ. Locust Dale and Green Spring Acads., Va. Grad. M. D. Med. Col. Va. 1879. Post-Grad. Course Univ. City N. Y., 1879-80. Elec. 1879. Present 1879, 1898, 1908. R. R. Surg. in Pa. 1885; Surg. L. & N. R. R. in Ky. 1888-9.

Coles, John E., Alberene, Albemarle Co., Va.—7.
Grad. M. D. Univ. Va. 1882. Elec. 1883.

Colely, Thomas J., Clintwood, Dickenson Co., Va.—9.
B. Dickenson Co., Va., May 22, 1874. Educ. Norton H. Sch., Ky., and N. N. U., Lebanon, O. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. June, 1903. Elec. 1904.

Collins, Elizabeth French, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., Nov. 23, 1874. Grad. Leache-Wood Sem., Norfolk, 1891. Grad. M. D. Woman's Med. Col. of Pa. 1899. Brd. June, 1900. Elec. 1900. Mem. Al. Assn. of W. M. Col. of Pa. Interne, New Eng. Hosp. for Women and Children (Boston, Mass.) 1899, 1900. Stud. lang. under priv. tut. Dresden, Paris and Rome, 1892-'03.

Collins, George Leman, Fortress Monroe, Elizabeth City Co., Va.—1.
B. Grand River Ind. Agency, Dak., Feb. 19, 1874. Educ. A. B. of Harvard Col., Mass., 1896. Grad. M. D. Harvard Univ. Med. School 1900. Brd. June, 1907. Elec. 1908. Present 1908. Mem. Am. Med. Assn. Lieut. U. S. A. Med. Corps. P. Asst. Surg. U. S. Mar. Hosp. Ser. Papers for Soc., Some Insect Borne Diseases; other papers, Lobar Pneu. Treated by Ice Pack. Relation of Insects to Dis.

Collins, G. T., Highland Springs, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. April, 1894. Brd. April, 1894. Elec. 1897. Asst. Dem. Anat. Univ. Col. of Med. 1896-'97. Phy. and Surg. to Henrico Co. Almshouse Hosp. 1897-1902. Mem. Co. Brd. Hlth. Present 1899, 1908.

Collins, Joseph Dorsey, Portsmouth, Norfolk Co., Va.—2.
B. Edinburg, Va., Feb. 3, 1884. Educ. Wash. & Lee Univ. Grad. M. D. Univ. Col. of Med., Richmond, 1905. Brd. June, 1905. Elec. 1905. Present 1905. Res. Phy. King's Daughters' Hosp., Portsmouth, 1905-'06.

Compton, Robert French, Charlottesville, Albemarle Co., Va.—7.
Grad. M. D. Univ. of Va. 1900. Brd. Dec., 1905. Elec. 1906.

Conduff, Samuel I., Hollins, Roanoke Co., Va.—6.
B. Floyd, Va., Sept. 9, 1874. Educ. Mt. Nor. Sch. Grad. M. D. Balto. Med. Col. 1898. Brd. June, 1898. Elec. 1904. Secty. Roanoke Co. Med. Soc. Mem. Am. Med. Assn. Ex-Assist. Surg. N. & W. Ry. Mem. Roanoke Co. Brd. Hlth. Ex. for Mut., U. Cent., and K. T. & M. L. Ins. Cos.

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Conduff, Simon P., Draper, Pulaski Co., Va.—9.
Grad. M. D. Balto. Med. Co. 1898. Brd. 1898. Elec. 1901.

Conger, Clement E., Rockingham, Rockingham Co., Va.—7.
B. Marietta, O., March 9, 1872. Educ. Aug. Mil. Acad. Grad. M. D. Univ. Va. 1895. Brd. June, 1896. Elec. 1908. Mem. Rockingham Co. Med. Soc.

Connelly, Emory Hale, Alberta, Brunswick Co., Va.—4.
Grad. M. D. Univ. Col. of Med., Richmond, 1905. Brd. June, 1905. Elec. 1906.

Conrad, Charles Edward, Williamsburg, James City Co., Va.—3.
B. Harrisonburg, Va., July 20, 1879. Educ. Randolph-Macon Acad. Grad. M. D. Univ. Va. 1905. Brd. June, 1905. Elec. 1908.

Cook, Giles Burneston, Richmond, Henrico Co., Va.—3.
B. Feb. 27, 1877, Balto., Md. Educ. Randolph-Macon Acad. and Wash. & Lee Univ. Grad. M. D. Geo. Wash. Univ. 1903. Brd. Dec., 1907. Elec. 1908. Present 1908. Mem. Manila, Phil. Is., Med. Socs. and Richd. Acad. Med. and Surg. Councilor P. I. Med. Assn. Papers, Liver Abscess, 1908.

Cooke, Robert Page, Winchester, Frederick Co., Va.
B. Clarke Co., Va., Oct. 12, 1874. Educ. Clay Hill Acad., Millwood. Wash. and Lee Univ. and U. S. N. Acad. Grad. M. D. Univ. of Va. 1897. Brd. June, 1899. Elec. 1905. Mem. Assn. Mil. Surgs. U. S.

Cooke, William L., Columbus, Muscogee Co., Ga.
B. Fauquier Co., Va., Oct. 20, 1870. Educ. Fredericksburg Col. Grad. M. D. Med. Col. Va. 1901. Brd. June, 1901. Elec. 1904.

Cooper, William Francis, Newport News, Warwick Co., Va.—1.
B. Warrenton, Va., Oct. 28, 1855. Educ. Warrenton High School, Univ. Va. Grad. M. D. Bellevue Hosp. Med. Col. 1879. Elec. 1879. Att. Sess. eight. V. Pres. 1888. Mem. N. E. Va. Med. Soc. Rep. Advances in Chem., Phar., Mat. Med. and Therap.

Copeland, Edward Virgil, Round Hill, Loudoun Co., Va.—8.
B. Rectortown, Fauquier Co., Va., June 9, 1882. Educ. Pub. Sch. and priv. tutors. Att. Univ. of Va. 1900-'02, Univ. of Md. 1903-'05. Grad. M. D. Univ. of Md. 1905. Brd. June, 1906. Elec. 1906. Present 1906. Mem. Bayview Med. Soc., Balto., Md. Phy. in charge Newport News Genl. Hosp. Asst. Res. Phy. Bayview Asy., Balto, Md. Papers, Treatment of Lobar Pneumonia.

Copeland, James E., Round Hill, Loudoun Co., Va.—8.
B. Hillsboro, Loudoun Co., Va. Grad. M. D. Wash. Univ., Balt., 1876. Elec. 1884. Present 1884, 1890, 3, 8. Mem. Am. Med. Assn.; of Assn. Surg. So. R. R.; of Ala. and Great So. R. R. Co. Ex-Pres. N. E. Va. Med. Soc. Surg. So. Ry. Co. Papers, Operation for the Relief of Bursal Swelling of the Wrist, Treatment of Hemorrhoids, Venesection in Rigidity of Os Uteri and Allied Conditions That May Retard Labor.

Copenhaver, William McSpodden, Bristol, Washington Co., Va.—9.
B. Wash. Co., Va., Feb. 14, 1876. Grad. M. D. Univ. Col. of Med., Richmond, 1900. Brd. June, 1900. Elec. 1904. Mem. S. W. Va. Med. Assn.; of Am. Med. Assn. Ex-Pres. Bristol Med. Soc. Papers, Diptheritic Laryngitis (1901), Intubation (1902). Practice limited to diseases of eye, ear, nose and throat.

Corbell, Robert Lawrence, Port Norfolk, Norfolk Co., Va.—2.
B. Nansemond Co., Va., Dec. 26, 1872. Educ. Suff. Mil. Acad. Grad. M. D. Med. Col. Va. 1898. Brd. July, 1898. Elec. 1898. Mem. Am. Med. Assn. Aux. Surg. Mar. Hosp., Norfolk.

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Corbett, H. C., Arlington, Alexandria Co., Va.—8.
Grad. M. D. Columbian Med. Co., D. C., 1883. Elec. 1895.

Cornett, Baron Francis, Bluefield, Mercer Co., W. Va.
B. Fairy, Grayson Co., Va. Educ. Roanoke Col. and Wm. & Mary Col. Grad. M. D. Col. Phy. & Surg., Atlanta, Ga., 1904. Brd. Dec., 1903. Elec. 1904. Mem. S. W. Va. Med. Soc. Interne Pres. Hosp,, Atlanta, Ga. Grad. Ph. D., Atlanta Sch. Post-Grad. course P. G. Med. Sch., N. Y., 1904-'05.

Corss, James Kennedy, Newport News, Warwick Co., Va.—1.
B. Lock Haven, Pa., April 14, 1869. B. A. 1889 and M. A. 1892 Amherst Col., Mass. Grad. M. D. Univ. of Pa. 1892. Brd. May, 1895. Elec. 1898. Mem. of Sea., Tri-State and Eliz. City Co. Med. Socs.; of Al. Assn. Univ. Pa. Late Res. Phys. Phila. Poly.; of Children's Hosp., Phila. Surg. Hogan S. S. Co. Exam. Man. L. Ins. Co.; A. O. U. M.; Amal. Soc. of Carpt. and Joiners.

Costen, Isaac Walter, Wallaceton, Norfolk Co., Va.—2.
B. Gates Co., N. C., Aug. 4, 1868. Educ. Sunbury Acad., Gates Co., N. C. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1892. Brd. June, 1904. Elec. 1905. Present 1905. Mem. Sea. Med. Soc. Passed Med. Ex. Brd. N. C.

Cottingham, George Russell, Remington, Fauquier Co., Va.—8.
B. Ottoman, Va., Oct., 1878. Educ. Chesapeake Acad. Grad. M. D. Univ. Col. of Med. 1900. Brd. June, 1900. Elec. 1901. Mem. Jun. Order Mech.

Coumbe, Arthur G., Vienna, Fairfax Co., Va.—8.
B. Washington, D. C., 1870. Educ. Columbian Univ., D. C. Grad. M. D. Univ. of Pa. Med. Dept. 1893. Brd. Dec., 1900. Elec. 1901. Mem. Med. Assn. D. C. Res. Phy. E. Dis. and other Hosps.

Coumbe, Oscar H., 248 Delaware Ave., Washington, D. C.
B. Washington, D. C., 1858. Grad. M. D. Nat. Univ. of D. C. 1891. Brd. 1891. Elec. 1905. Present 1905. Mem. Am. Med. Assn.; of Med. Assn. D. C.; of Med. Soc. D. C.; of Ther. Med. Soc. D. C. (and Ex-Pres); of Fairfax Co. Med. Soc.; Asst. to Prof. Obstet. and Gyn. Nat. Univ. D. C.

Cowan, R. H., Radford, Montgomery Co., Va.—6.
Grad. M. D. Med. Col. Va. 1876. Elec. 1904.

Cowardin, Lewis M., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1884. Elec. 1887. Prof. Prin. and Prac. Dent. and Asso. Prof. Clin. Oral Surg. Univ. Col. Med., Richmond.

Cowardin, William James, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Dec. 19, 1876. Educ. Pub. Sch. Grad. D. D. S. 1896 and M. D. 1898 Univ. Col. Med., Richmond. Brd. June, 1898. Elec. 1899. Present 1899, 1908. Mem. Richmond Acad. Med. and Surg.; of Va. State Dent. Soc.; of Richmond Dent. Soc. Prof. Ortho. Univ. Col. of Med., Richmond. Papers, Psuedo Anchylosis, Richmond Dent. Soc., 1899.

Cowie, Charles Stuart, Culpeper, Culpeper Co., Va.—8.
Grad. M. D. Columbian Univ. 1891. Brd. Dec. 1905. Elec. 1906.

Craig Stuart L., N. Y. Eye and Ear Infirmary, New York, N. Y.
Grad. M. D. Med. Col. Va. 1905. Brd. June, 1906. Elec. 1907.

Craig, William Hartley, McComas, Mercer Co., W. Va.
B. Manchester, Va., Mch. 17, 1883. Educ. Richmond (Va.) H. Sch. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907. Mem. Al. Assn. Med. Col. Va.

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Craighill, Edward Addison, Lynchburg, Campbell Co., Va. Res. Hon. Mem.—6.
B. Nov. 2, 1840, Charlestown, Jeff. Co., Va. (now W. Va.). Educ. Charlestown Acad. Grad. M. D. Univ. of Pa. 1861. Elec. 1874. Resigned 1892. Re-elected 1904. Hon. Mem. 1906. Mem. Soc. of Army and Navy Confed. Surg. Surg. C. S. A. 1861-'65.

Crane, James Fuller, Richmond, Henrico Co., Va.—3.
B. Orange Co., Va., Jan. 22, 1850. Grad. M. D. Med. Col. Va. 1875. Elec. 1908. Mem. Rich. Acad. Med. & Surg.; (and Pres. 1908) Church Hill Med. Soc. For. Adj. Prof. Dis. of Child. Univ. Col. Md.

Crawford, Joel, Yale, Sussex Co., Va.—4.
B. Dinwiddie Co., Va., June 11, 1861. Grad. M. D. Univ. of Pa. 1883. Elec. 1888. Present 1888, 1891-'92.

Creasy, William F., Newport News, Warwick Co., Va.—1.
B. Columbia Co., Pa., April 30, 1863. Educ. Agri. and Mech. Col., Blacksburg, Va. Grad. M. D. Univ. Md. April, 1890. Brd. Jan., 1891. Elec. 1897. Present 1898, 1908. Pres. Newport News Med. Soc. Phy. and Surg. City Jail.

Crenshaw, John Lewis, University, Albemarle Co., Va.—7.
B. Elizabeth, N. J., Jan. 2, 1882. Grad. of Epis. High Sch. and one Sess. Univ. of Va. Grad. M. D. Univ. of Va. 1906. Brd. June, 1906. Elec. 1906. Mem. Phi. Rho Sigma Frat.

Cringan, John W., Arrington, Nelson Co., Va.—10.
B. Richmond, Va., Sept. 29, 1877. Educ. McGuire's Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. Dec., 1901. Elec. 1905.

Criser, Charles Glenn, Warm Springs, Bath Co., Va.—10.
B. Warm Springs, Va., Feb. 18, 1871. Educ. Pub. Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1903.

Crittenden, William James, Unionville, Orange Co., Va.—8.
B. Fauquier Co., Va., Nov. 26, 1859. Educ. Pub. Sch. and priv. tutors. Stud. Med. Univ. of Va. Grad. M. D. Bellevue Hosp. Med. Col. 1884. Elec. 1885. Present 1886, 8, 1890, 1, 4, 1900. Surg. P. F. & R. R.; ex-Pres. Pied. Med. Soc. Papers for Soc., Dysentery, 1891; Salient Points in Epidemic of Typhoid Fever—55 Cases.

Crockett, Alexander G., Max Meadows, Wythe Co., Va.—9.
B. Wythe Co. 1862. Educ. Emory and Henry Col. Grad. M. D. Vanderbilt Univ. 1883. Post-Grad. 1891. Elec. 1891. Mem. Wythe Co. Med. Assn.

Crockett, John H., Tazewell, Tazewell Co., Va.—9.
Grad. M. D. Vanderbilt Univ. 1879. Elec. 1891.

Crockett, Melvin Butcher, Knob, Tazewell Co., Va.—9.
Grad. M. D. Univ. Col. of Med., Richmond, May, 1894. Brd. Sept., 1895. Elec. 1901.

Crockford, Jr., William Hamilton, Petersburg, Dinwiddie Co., Va.—4.
B. Charlottesville, Va., 1877. Educ. Jones Univ. Sch., Charlottesville, Va. Grad. M. D. Univ. of Va. 1901. Brd. Dec., 1901. Elec. 1903. Mem. Wise Co. Med. Assn.

Cross, Edward, Kingsville, Neuces Co., Texas. Non-Res. Hon. Mem.
Grad. M. D. Univ. La. 1862. Elec. Non-Res. Hon. Mem. 1887.

Crothers, T. D., Hartford, Conn. Non-Res. Hon. Mem.
Grad. M. D. Albany Med. Col., N. Y., 1865. Elec. Non-Res. Hon. Mem. 1901. Edit. Quar. Jour. of Inebriety. Prop. Walnut Lodge Hosp. Prof. Dis. of Brain and Nerv. System N. Y. Sch. Clin. Med.

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Croxton, William Edwards, Wakema, King William Co., Va.—3.
Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904.

Crute, Charles Bledsoe, Farmville, Prince Edward Co., Va.—4.
B. Farmville, Va., Nov. 29, 1880. Educ. Randolph-Macon Col. Grad. M. D. Univ. of South 1903. Brd. June, 1903. Elec. 1903.

Culbertson, William R., Coeburn, Wise Co., Va.—9.
B. Scott Co., Va., July 21, 1879. Grad. M. D. Balto. Univ. 1904. Brd. Dec., 1904. Elec. 1907. Mem. Wise Co. Med. Assn. U. S. Pen. Exam. Surg. Med. Exam. Prud. and Mut. Ben. L. Ins. Cos. Papers, Management of Pregnancy, 1907.

Cullers, Robert B., Bentonville, Warren Co., Va.—7.
Grad. M. D. Col. Phys. and Surg., Balt., April, 1893. Brd. 1893. Elec. 1897.

Culpeper, James Henry, Norfolk, Norfolk Co., Va.—2.
B. Portsmouth, Va., Dec. 17, 1882. Educ. Univ. Va. Grad. M. D. Univ. Pa. 1905. Brd. June, 1906. Elec. 1908. Mem. Norfolk Med. Soc. Asso. Phy. Sarah Leigh Hosp., Norfolk. Int. Phila. Hosp. 1905-'06.

Cumming, Hugh S., U. S. Marine Hospital Service, Yokohama, Japan.
B. Hampton, Va., Aug. 17, 1869. Educ. Priv. Schls. and Balto. City Col. Grad. M. D. Univ. of Va. 1893; of Univ. Col. Med., Richmond, April, 1894. Passed U. S. Mar. Hosp. Brd. May, 1894. Elec. 1896. Received prize 1897 for second best essay on "History of Medicine and Surgery in Virginia." H. Phy. St. Luke's Hospt., Richmond, 1893-4.

Cummings, James W., Abingdon, Washington Co., Va.—9.
Grad. M. D. Med. Dept. Univ. City N. Y. 1877. Elec. 1889.

Curtis, Humphrey William, Denbigh, Warwick Co., Va.—1.
B. Lee Hall, Va., June 4, 1876. Educ. Pub. Sch. and priv. tutors. Stud. Med. Univ. Col. Med., Richmond. Grad. M. D. Med. Col. Va. 1901. Brd. 1901. Elec. 1904. Present 1904. Mem. Al. Soc. Med. Col. Va. (and Secty.) Warwick Co. Brd. of Hlth. Phy. to Co. (Warwick) Jail.

Cushing, Wilson Reynolds, Dublin, Pulaski Co., Va.—9.
B. Hartford Co., Md., Feb. 11, 1857. Educ. A. M. W. Md. Col. Grad. M. D. Univ. Md. 1881. Elec. 1885. Present 1885, 9, 1892. Papers for Soc., Case of Premature Birth with Membranes Intact, 1885. Report on Advances in Prac. of Med., 1890.

Dalby, William Lee, Bridgetown, Northampton Co., Va.—1.
B. Bridgetown, Va., Dec. 11, 1869. Educ. Onancock Acad. Grad. M. D. Med. Col. Va. 1891. Brd. April, 1891. Elec. 1905.

Dalton, Martin L., Floyd, Floyd Co., Va.—5.
B. Hillsville, Va., June 30, 1876. Educ. Hillsville H. Sch. Grad. M. D. Univ. Col. of Med., Richmond, May, 1899. Brd. June, 1899. Elec. 1901. Att. N. Y. Post-Grad. Sch. & Hosp. 1903. Mem. Amer. Med. Assn.; of S. W. Va. Med. Soc. Exam. Mut. L. Ins. Co. of N. Y.; for Ger. N. Y., Penn. Mut., S. Atlantic and other Ins. Cos. Papers, Eclampsia.

Dameron, Buxton Williams, Warfield, Brunswick Co., Va.—4.
B. Inez, N. C., Mch. 18, 1877. Educ. Whitsett Inst. Grad. M. D. Med. Col. Va. 1905. Brd. Dec., 1905. Elec. 1907.

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Daniel, Charles Camp, Wiggins, Colleton Co., S. C.
B. Va. 1883. Educ. Windsor Acad. Windsor, Va. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907.

Daniel, Samuel A., Welch, McDowell Co., W. Va.
Grad. M. D. Ky. Sch. of Med. 1894. Brd. 1895. Elec. 1904.

Daniel, William B., Disputanta, Prince George Co., Va.—4.
Grad. M. D. Med. Col. Va. 1863. Elec. 1885.

Darden, Julius C., Salem, Roanoke Co., Va.—6.
B. Isle of Wight Co., Va., Oct. 29, 1878. Educ. Randolph-Macon Acad. and Col. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. June, 1901. Elec. 1904. Interne Workhouse and Almshouse Hosp., Blackwell's Island, N. Y.

Davenport, William Leslie, Meadow View, Washington Co., Va.—9.
B. Greenup Co., Ky., March 21, 1861. Grad. M. D. Col. Phys. and Surg., Balt., April 19, 1893. Brd. spring 1893. Elec. 1897.

Davidson, Charles Hyde, Lexington, Rockbridge Co., Va.—10.
B. Kerr's Creek, Va. Grad. M. D. Univ. of Va. 1894. Brd. 1894. Elec. 1904.

Davidson, John Porter, Richmond, Henrico Co., Va.—3.
B. Rockbridge Co., Va., March 10, 1869. Educ. Va. Poly. Inst. Grad. M. D. Univ. of Va. June, 1893. Brd. Sept., 1893. Elec. 1898. Prof. Dis. Eye, Ear and Throat Med. Col. Va. 1898-'99. Late H. Surg. N. Y. Eye and Ear Inf. Papers, Treatment Suppurative Keratitis, 1898; Management Acute and Chronic Suppurative Otitis Media, 1898.

Davis, Edward Douglass, Harrisonburg, Rockingham Co., Va.—7.
B. Charlestown, Jeff. Co., W. Va., Nov. 17, 1867. Educ. Priv. Schls. and Charlestown Male Acad. Grad. D. D. S. 1889 and M. D. 1894 Univ. of Md. Brd. June, 1894. Elec. 1905.

Davis, Edward Parker, 250 S. Twenty-First St., Philadelphia, Pa. Non-Res. Hon. Mem.
B. N. Y. State Sept. 16, 1856. Educ. High School, B. A. and M. A. Princeton Univ. Grad. M. D. Rush Med. Col., Chicago, 1882; Jeff. Med. Col., Phila., 1887. Elec. Non-Res. Hon. Mem. 1900. Present 1900. Mem. Am. Gyn. Soc.; of Am. Med. Assn.; of Phila. Obstet. Soc.; of Internat. Cong. Obstet. and Gyn. (Founder); of Surg. Soc. of Bucharest (Hon.). Prof. Obstet. Jeff. Med. Col., Phila.

Davis, Edward W., Salem, Roanoke Co., Va.—6.
B. Meadville, Va., July 25, 1847. Educ. Priv. Schls. and Pat. Henry Acad. Grad. M. D. Ky. Schl. Med., Louisville, 1884. Elec. 1908. Mem. S. W. Va. and Bedford Co. Med. Socs. Papers, Armless Body, 1887.

Davis, Ernest D., Standardsville, Greene Co., Va.—7.
B. Greene Co., Va. Grad. M. D. Med. Col. of Va. 1889. Brd. 1889. Elec. 1900. Present 1900. Res. Phy. City (Richmond, Va.) Almshouse 1889-'90.

Davis, James M., Blackstone, Nottoway Co., Va.—4.
Grad. M. D. Med. Col. Va. 1869. Elec. 1904.

Davis, John Allen, Bedford City, Bedford Co., Va.—6.
B. Tarboro, N. C., Aug. 21, 1866. Educ. Tarboro Male Acad. Grad. M. D. Univ. Md. 1889. Passed Brd. N. C. April, 1889, of Va. Aug., 1891, of W. Va. 1894. Elec. 1891. Present 1891-'93. Exam. several I. Ins. Cos. Surg. C. & O. Ry. Coalburg. Papers, Intestinal Obstruction by Worms.

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Davis, John Staige, University, Albemarle Co., Va.—7.
B. Univ. Va. June 24, 1866. M. A. Univ. Va. Grad. M. D. Univ. of Va. 1889. Brd. 1894. Elec. 1894. Pres. Pied. Med. Soc. 1904-'05. Mem. La. State Med. Soc., and Am. Acad. of Med. Adj. Prof Pathol. and Hyg. Univ. of Va.

Davis, Robert Benton, Holdcroft, Charles City Co., Va.—3.
B. Chas. City Co., Va., June 19, 1875. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907. Mem. Al. Assn. Med. Col. Va. Med. Exam. Union Mut. L. Ins. Co. Me.

Day, William Chilton, Danville, Pittsylvania Co., Va. Res. Hon. Mem.—5.
B. Smithfield, Va., June 6, 1841. Educ. Smithfield Acad. and Univ. Va. Grad. M. D. Med. Col. Va. 1864. Elec. 1884. Hon. Mem. 1906. V.-Pres. 1896; Att. Ses. nearly all since. Mem. Nat. Assn. R. R. Surg. Surg. C. S. Army, Asst. Med. Dir. Hosp. Dept. S. W. Va. and E. Tenn.; Surg. 3. Div. So. Ry. Co. Ex-Pres. Danville Acad. of Med.

Dearmont, Charles Olive, White Post, Clarke Co., Va.—7.
B. Clarke Co., Va., Aug. 18, 1878. Educ. Pub. and High Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1903. Brd. June, 1903. Elec. 1904. Mem. Med. Soc. of Clarke & Fred Cos.

Deas, Wiliam A., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1879. Elec. 1904. Coroner Henrico Co. Phy. Soldiers' Home, Richmond.

DeBordenave, Ernest Auguste, Franklin, Southampton Co., Va.—2.
B. Southampton Co., Va., April 17, 1874. Grad. M. D. Med. Col. of Va. May, 1899. Brd. June, 1899. Elec. 1900. Res. Phy. Norfolk Prot. Hosp. 8 months.

DeCormis, Joseph L., Accomac, Accomac Co., Va.—1.
B. Shawboro, N. C., March 26, 1882. Educ. High Sch. Grad. M. D. Univ. of Md. 1903. Brd. June, 1904. Elec. 1905. Present 1905.

DeGarmo, William Burton, 616 Madison Ave., New York, N. Y. Non-Res. Hon. Mem.
B. West Troy, Wis., April 24, 1849. Grad. M. D. Med. Dept. N. Y. Univ. 1875. Elec. Non-Res. Hon. Mem. 1897. Mem. Med. Socs. State & Co. of N. Y.; of N. Y. State and Co: Med. Assns.; of N. Y. Acad. of Med. and Am. Med. Assn. Prof. Spec. Surg. N. Y. Post-Grad. Med. Sch. and Hosp. Papers for Soc., Surgical Treatment of Hernia, 1889; Have We Found a Radical Cure for Inguinal Hernia? 1897.

Deitrick, Joseph Lynn, Ellerson, Hanover Co., Va.—3.
Grad. M. D. Univ. of Md. 1891. Brd. April, 1891. Elec. 1893. Present 1898, 1908.

DeJarnette, Elliott, Ashland, Hanover Co., Va.—3.
B. Caroline Co., Va., July 25, 1873. Educ. Bowling Green Male Acad. Grad. M. D. Univ. of Va. 1897. Brd. Sept., 1896. Elec. 1905.

DeJarnette, Henry Magruder, Staunton, Augusta Co., Va.—10.
B. Spotsylvania Co., Va., 1874. Educ. Va. Mil. Inst. Grad. M. D. Univ. Col. of Med., Richmond, 1897. Brd. June, 1897. Elec. 1903.

DeJarnette, Joseph Spencer, Staunton, Augusta Co., Va.—10.
B. Spotsylvania Co., Va., 1874. Grad. M. D. Med. Col. Va. 1888. Brd. April, 1888. Elec. 1889. Present 1890, 1908. For. Res. Phys. Confed. Soldiers' Home, Richmond, now Supt. W. State (Va.) Hosp. Papers for Soc., Psychology.

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Delaney, Martin D., Alexandria, Alexandria Co., Va.—8.
B. Ohio April 28, 1874. Educ. St. John's Acad., Alexandria, Va. Grad. M. D. Georgetown Univ. 1898. Brd. Va. June, 1899; of D. C. Jan., 1899. Elec. 1900. Mem. Alex. Med. Soc. Ex-Res. Phy. Columbia Hosp.

DeShazo, James Beverly, Ridgeway, Henry Co., Va.—5.
B. Henry Co., Va., Sept. 13, 1868. Educ. Oak Ridge Inst., N. C., and U. S. Mil. Acad., West Point. Grad. M. D. Bellevue Hospital Med. Col. 1892. Brd. April, 1892. Elec. 1894. Present 1894, 5, 6, 9, 1900, 1, 2, 3, 4, 5, 6, 7, 8. Chm. Legis. Com. 1900-'08. Address to Soc. on "Removal of the Special License Tax," Oct. 23, 1900. Papers, several.

DeShazo, John Newton, Center Cross, Essex Co., Va.—1.
Grad. M. D. Med. Col. of Va. 1900. Brd. spring, 1900. Elec. 1900

Detwiler, Edwin L., Herndon, Fairfax Co., Va.—8.
Grad. M. D. Jeff. Med. Col. 1886. Brd. 1886. Elec. 1889.

Devany, Walter, L., Dendron, Surry Co., Va.—4.
Grad. M. D. Med. Col. Va. 1883. Elec. 1887.

Dew, Henry W., Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Col. P. and S., Balt., 1886. Brd. May, 1886. Elec. 1893.

Dew, Roderick, Goodloes, Spotsylvania Co., Va.—1.
Grad. M. D. Med. Col. Va. July 15, 1891. Brd. April, 1891. Elec. 1893.

Dew, T. Welch, Youngs, Spotsylvania Co., Va.—1.
Grad. M. D. Med. Col. of Va., 1894. Brd. April, 1894. Elec. 1894.

Deyerle, James Henry, Roanoke, Roanoke Co., Va.—6.
B. Rocky Mount, Va., 1876. B. A. Roanoke Col. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1907. Mem. W. Va. State Med. Assn.; of Am. Med. Assn.

Dickerson, L. C., Stuart Patrick Co., Va.—5.
Grad. M. D. Univ. of South, Tenn., 1901. Brd. June, 1902. Elec. 1905.

Dickinson, Frank Powell, Montgomery, Fayette Co., W. Va.
B. Belmont, Va., July 10, 1858. Educ. Green Level Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1904. Present 1906. Asst. Phy. Kanawha, Eureka and Mecca Coal Min. Cos. Exam. for Prud. Ins. Co.

Dickinson, Smelt Winston, Marion, Smyth Co., Va.—9.
B. Louisa Co., Va., Jan. 23, 1851. Educ. Kenmuir Acad. Res. Stud. Univ. Hosp. Sept., 1871, to March, 1872. Grad. M. D. Med. Col. Va. 1871; Univ. Md., 1872. Elec. 1872. Present 1875, 6, 8, 1884, 5, 6, 9, 1890, 2, 5, 1901, 3, V. Pres. 1901. Mem. Med. Ex. Brd. Va. 1885, 1890; of S. W. Va. Med. Soc.; Ex-Dir. S. W. (Va.) State Hosp., Ex-Pres. Al. Soc., Med. Col. Va.

Dillard, Benjamin L., Scottsville, Albemarle Co., Va.—7.
Grad. M. D. Univ. of Md., Balto., 1882. Elec. 1902.

Dillard, John William, Lynchburg, Campbell Co., Va.—6.
B. Nelson Co., Va., 1852. Educ. Day Sch. Grad. M. D. Univ. Va. 1875. Elec. 1876. Present 1876, 8, 1885, 7, 9, 1890, 1, 2. 1st V.-Pres. 1890. Mem. Am. Med. Assn.; Pied. Med. Soc. Surg. N. & W. R. R. Surg. Hygeia Hosp., Lynchburg. Papers, Alum and Iron Waters; Foreign Bodies in Eye; Hypodermics of Morphine in Sea Sickness; Atresia Vaginae; Fractures of Skull.

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Dillard, M. P., Alumine, Franklin Co., Va.—5.
B. Franklin Co., Va., April 21, 1853. Educ. Pub. Sch. Prac. Med. Prior to Exam. Brd. Elec. 1905. V. Pres. Patrick Henry Med. Soc. Phy. to Poor, Brown Hill Dist., Franklin Co., Va.

Dinsmore, David F., Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Univ. of Louisville, Ky., 1872. Brd. Sept., 1892. Elec. 1901.

Dobyns, Benjamin Samuel, Fries, Grayson Co., Va.—5.
B. Surry Co., N. C., 1872. Educ. Oxford Acad., Floyd Co., Va. Grad. M. D. Univ. Col. of Med., Richmond, 1895. Brd. May, 1895. Elec. 1900. Phy. and Surg. Va. Mining Co.

Dodd, Charles Singleton, Coote's Store, Rockingham Co., Va.—7.
B. Meadsville, Va., Jan. 6, 1881. Educ. Mary Agnes Inst. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1905. Present 1905. App. Phy. and Surg. to Plains Dist. July, 1904.

Dodd, William Thomas, Wylliesburg, Charlotte Co., Va.—6.
Grad. M. D. Univ. of South 1904. Brd. June, 1905. Elec. 1906.

Dodge, W. B., Stuart's Draft, Augusta Co., Va.—10.
Grad. M. D. Hosp. Col. of Med., Louisville, Ky., 1884. Elec. 1886.

Dold, Calvin Graham, Lexington, Rockbridge Co., Va.—10.
B. Lexington, Va., March 31, 1870. B. S. Wash. and Lee Univ., Lexington, Va. Grad. M. D. Univ. of Md. 1891. Brd. Oct., 1891. Elec. 1899. Present 1891-'92.

Doughtie, Charles Wilson, Station 1, Norfolk, Norfolk Co., Va.—2.
B. Nansemond Co., Va., Feb. 20, 1877. Educ. Suffolk Mil. Acad. Grad. M. D. Med. Col. of Va. 1898. Brd. June, 1898. Elec. 1899. Mem. Soc. Al. Med. Col. of Va.; of Norfolk Med. Soc.; House Phy. and Surg. Norfolk Prot. Hosp. Papers, Treatment of Puerperal Convulsions, 1898.

Douglas, Morton Guthrie, Warrenton, Fauquier Co., Va.—8.
B. Zanesville, Ohio, June 17, 1869. Educ. Zanesville High Sch. Grad. M. D. Univ. Md. 1895. Brd. June, 1897. Elec. 1898.

Downey, B. D., Portsmouth, Norfolk Co., Va.—2.
Grad. M. D. Univ. of Md. 1883. Elec. 1888.

Downey, Frederick Clifton, Edinburg, Shenandoah Co., Va.—7.
B. Edinburg, Va., Oct. 15, 1875. Grad. M. D. Balto. Univ. 1898. Brd. June, 1903. Elec. 1903.

Downing, Edmund Wainhouse Poulson, Franktown, Northampton Co., Va.—1.
B. Belle Haven, Va., July 18, 1860. Grad. M. D. Col. Phy. and Surg. Balto., Md., 1886. Brd. fall 1886. Elec. 1905. Several papers for Med. Brief—Mostly on Typhoid.

Drake, Grandison Werther, Hollins, Roanoke Co., Va.—6.
B. Powhatan Co., Va., April 4, 1842. Educ. Richmond Col. Grad. M. D. Vanderbilt Univ. 1877. Brd. June, 1899. Elec. 1899. Att. Sess. several. Mem. Tenn. State (and Ex-Pres.) of Chattanooga; of Nashville; of Elk; of Tri-State Med. Socs. and Am. Med. Assn.; Ex-Pres. Tenn. State Med. Soc. Res. Phy Monteagle Assembly (Tenn.) five years. Res. Phy. Hollins Inst. 1898, 1909. Surg. Forest Camp, C. V.

Drake, Jr., John Adonis, Clarksville, Mecklenburg Co., Va.—4.
Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1907.

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Draper, Sylvester Amos, Logan, Logan Co., W. Va.
B. Rockingham Co., Va., August, 1874. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1900.

Drewry, Fenton D., Virgilina, Halifax Co., Va.—6.
Grad. M. D. Med. Col. of Va. April, 1898. Brd. June, 1898. Elec. 1900.

Drewry, Herbert Roney, Lambert Point, Norfolk, Norfolk Co., Va.—2.
B. Drewrysville, Southampton Co., Va., 1867. Educ. McCabe's Univ. Sch. and Va. Mil. Inst. Grad. M. D. Med. Col. Va. 1895. Brd. 1894. Elec. 1895.

Drewry, John William, Boykins, Southampton Co., Va.—2.
B. Southampton Co., Va., Feb., 1851. Grad. M. D. Med. Col. Va. 1872. Elec. 1905. Surg. Sea. A. L. Ry.

Drewry, Madison R., Cascade, Pittsylvania Co., Va.—5.
Grad. M. D. Univ. of Md., Balt., 1887. Elec. 1888.

Drewry, William Francis, Petersburg, Dinwiddie Co., Va. Res. Hon. Mem.—4.
B. Southampton Co., Va., March 10, 1860. Educ. Murfreesboro Acad., N. C., and Ran.-Macon Col. Grad. M. D. Med. Col. Va. 1884. Elec. 1886. Att. Sess. nearly all since. Pres. 1907-8. Hon. Mem. 1908. Mem. Exec. Com. 1905-7; Com. on Revis. of Const. 1906-7; House of Del. A. M. A. 1906-7; Am. Med. Assn.; Am. Medico-Psy. Assn.; Nat. Assn. Study of Epilep.; Supt. C. S. Hosp. 1896-'09.

Driver, William F., New Market, Shenandoah Co., Va.—7.
B. Timberville, Va., July 3, 1877. Educ. Timberville Grad. Sch. and Bridgewater (Va.) Col. Grad. M. D. Univ. Col. Med., Richmond, 1904, and Ph. D. same Col. 1901. Brd. 1904. Elec. 1904.

Driver, Wilson E., Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Univ. of Md. April, 1893. Brd. April, 1893. Elec. 1896.

Drummond, Fletcher, Parksley, Accomac Co., Va.—1.
Grad. M. D. Jeff. Med. Col. 1870. Elec. 1894.

Duane, Alexander, 49 E. 30th Street, New York, N. Y.
B. Malone, N. Y., Sept. 1, 1858. A. B. Union Col., N. Y., 1878. Grad. M. D. Col. Phys. and Surg., N. Y., 1881. Brd. April, 1890. Elec. 1890. Present 1890, 6. Surg. N. Y. Ophth. and Aural Inst., etc. Mem. Num. Prof. Socs. Author var. text-books and over 40 arts., mainly on Ophthal.; Lieut. U. S. N., Sp.-Am. War.

Dudley, Morton Leonard, Glade Hill, Franklin Co., Va.—5.
B. Glade Hill, Va., March 14, 1883. Educ. High Sch. and Roanoke Col. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1905. Brd. June, 1905. Elec. 1905.

Dulaney, Jr., Nat T., Bristol, Washington Co., Va.—9.
Grad. M. D. Tenn. Med. Col. 1893. Brd. Dec., 1900. Elec. 1907.

Dunkley, James H., Saltville, Smyth Co., Va.—9.
B. Stuart, Va., 1869. Educ. Stuart Nor. Col. and Va. Pol. Inst. Grad. M. D. Col. of Phys. and Surg., Balto., 1893. Brd. 1893. Elec. 1901. Res. Phy. Pulaski Iron Co.; Va. Iron, Coal and Coke Co.; Bertha Mineral Co. Exam. several L. Ins. Cos.

Dunlap, James C., Middlebrook, Augusta Co., Va. Res. Hon. Mem.—10.
B. Oct. 22, 1836. Educ. High Sch. of Augusta and Rockbridge Cos. and Univ. of Va. 1858-'59. Grad. M. D. Jeff. Med. Col. 1860. Elec.

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1893. Hon. Mem. 1906. Surg. 93d Reg. Va. Mil. 1861. Surg. Duke's Bat. and Res. Forces of Va. under Kemper, C. S. A., 1864.

Dunn, John, Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. of Va. 1886. Brd. 1888. Elec. 1889. Prof. Dis. Ear, Nose and Throat, Univ. Col. Med., Richmond. Formerly Edit. Dept. Eye, Ear, Throat and Nose, Va. Med. Semi-Mo. Papers, many for jours. relating to dis. of eye, ear or throat.

Dunn, William L. Glade Spring, Washington Co., Va.—9.
B. Glade Spring, Va., Sept. 15, 1839. Educ. Emory and Henry Col. Grad. M. D. Med. Col. Va. 1863. Elec. 1874. Present 1874, 1890, 2, 5, 6. Ex-Pres. Abingdon Acad. of Med. Asst. Surg., then Surg. (1865) 43d Bat. Va. Cav. Papers, Ovarian Cyst Successfully Removed During Labor, 1874. Typhoid Fever, 1894.

Dunn, William Wilcox, Richmond, Henrico Co., Va.—8.
B. Petersburg, Va., 1870. Grad. M. D. Col. Phy. & Surg., N. Y., 1894. Brd. June, 1898. Elec. 1899. Present 1899.

Dupuy, H. Rolfe, Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Louisville Med. Col. 1874. Elec. 1885.

Dupuy, Joseph Thomas, Ballsville, Powhatan Co., Va.—4.
B. Prince Edward Co., Va., 1835. Grad. M. D. Jeff. Med. Col. 1861. Elec. 1888. Att. Sess. three. Surg. Buckingham Slate Works.

Dyer, Charles E., Ivanhoe, Wythe Co., Va.—9.
B. Barren Springs, Va., July 1, 1880. Educ. Woodlawn Nor. Inst. and Emory and Henry Col. Grad. M. D. Univ. Col. of Med., Richmond, 1904. Brd. June, 1904. Elec. 1905. Mem. S. W. Va. Med. Assn. Phy. and Surg. to Ivanhoe Furnace Co.

Early, Bernard Heath, Montvale, Bedford Co., Va.—6.
B. Hillsville, Va., Feb., 1877. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1900. Surg. Va. Iron, Coal and Coke Co.

Early, James Louis, Saltville, Smyth Co., Va.—9.
B. Woodlawn, Va., Sept. 14, 1875. Educ. Woodlawn Nor. Inst. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1902. Present 1902.

Early, John Emmet, Charlottesville, Albemarle Co., Va.—7.
B. Madison Co., Va., Oct. 18, 1867. Educ. Blacksburg, Va. Grad. M. D. Univ. of Va. 1893. Brd. 1894. Elec. 1900. Present 1900. Mem. Charlottesville Med. Soc.

Early, Leverett S., Petersburg, Dinwiddie Co., Va.—4.
B. Evington, Va., Feb. 28, 1874. Educ. New London Acad. 1889-'94. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1907. Mem. (and Secty.) Petersburg Med. Fac. of Southside Med. Assn.

Early, William Leyton, Wolftown, Madison Co., Va.—7.
B. Madison C. H., Va., April 8, 1877. Educ. Locust Dale Acad. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1898. Elec. 1906. Present 1906. Mem. Pied. Med. Soc. Mem. Co. (Madison) Brd. of Hlth.

Easter, Clay Miller, Front Royal, Warren Co., Va.—7.
B. Oakland, Md., April 30, 1871. Grad. M. D. Balto. Med. Col. 1895. Brd. June, 1906. Elec. 1906. For. Interne Md. Gen. Hosp.

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Eastham, Granville, Crooked Run, Culpeper Co., Va.—8.
B. Culpeper Co., Va., Oct. 6, 1882. Educ. High Schl., Wm. and Mary Col. and Univ. South. Grad. M. D. Memphis Hosp. Med. Col. 1904 and Univ., Nashville, 1905. Brd. June, 1905. Exam. Equit., Cap., N. W. and Home L. Ins. Cos.

Edmond, Courtney, Clifton Forge, Alleghany Co., Va.—10.
B. Henrico Co., Va., Jan. 4, 1876. Educ. Kinston Col., Kinston, N. C. Grad. M. D. and D. D. S. Univ. Col. of Med., Richmond, 1903. Brd. June, 1903. Elec. 1907. House Surg. C. & O. Ry. Hosp., Huntington, W. Va., 1903, and St. Vincent's Hosp., Norfolk, Va., 1903-'05. Inst. Surg. Anat. Univ. Col. of Med. 1905-'06. Asst. to Dr. John Dunn, Richmond, Va., 1905-'07.

Edmond, Marion, Millboro, Bath Co., Va.—10.
B. Henrico Co., Va., Jan. 15, 1878. Educ. McCabe's Univ. Sch. and Richmond Col. Grad. M. D. Med. Col. Va. 1901. Brd. Dec., 1901. Elec. 1906.

Edmonds, Jr., Henry Jeter, Kilmarnock, Lancaster Co., Va.—1.
Grad. M. D. Univ. of Md. 1887. Elec. 1888.

Edmonds, James Park, Stonega, Wise Co., Va.—9.
B. Brick Store, Lee Co., Va., Feb. 19, 1874. Educ. High Sch. Grad. M. D. Hosp. Col. of Med., Louisville, Ky., June, 1898. Brd. Nov., 1899. Elec. 1900.

Edmondson, Henry B., Bristol, Washington Co., Va.—9.
Grad. M. D. Univ. of Md. 1891. Brd. April, 1891. Elec. 1893.

Edmunds, Thomas Wister, Danville, Pittsylvania Co., Va.—5.
B. Danville, Va., April 1, 1883. Educ. Univ. of N. C. Grad. M. D. Col. Phy. and Surg., Balto. 1907. Brd. Dec., 1907. Elec. 1908. Present 1908. Mem. Pied. Med. Soc.

Edmundson, William H., Christiansburg, Montgomery Co., Va.—6.
Grad. M. D. Med. Col. Va. 1875. Elec. 1885.

Edwards, Arthur Joseph, Bristol, Washington Co., Va.—9.
B. Sparta, Alleghany Co., N. C. B. S. Univ. of N. C. 1893. Grad. M. D. Univ. of Md. 1899. Brd. 1900. Elec. 1902. Res. Phy. Univ. of Md. 1899-1901.

Edwards, Charles M., Richmond, Henrico Co., Va.—8.
B. Richmond, Va., July 30, 1875. Educ. Ran.-Macon Col. Grad. M. D. Univ. Col. Med., 1896. Brd. June, 1896. Elec. 1896. Present 1896-7-8-9, 1904-5-8. Mem. R'd. Acad. Med. and Surg.; Tri-State Med. Assn.; Adj. Prof. Prac. Med. 1896-1900; Asst. to Ch. Clin. Med. 1898-1902; Lect. Phy. Diag. 1900-7 Univ. Col. Med.; Asso. Ed. Va. Med. Semi-Mo.; Surg. Rich. Blues, 1901-7.

Edwards, George Martin, Newport News, Warwick Co., Va.—1.
B. Russellville, Ky., Nov. 27, 1879. A. B. Bethel Col., Russellville, Ky. Grad. M. D. Univ. Pa. 1903. Brd. Dec., 1905. Elec. 1906. Mem. Peninsula Soc. for Med. Improvement.

Edwards, Landon Brame, Richmond, Henrico Co., Va. Resident Hon. Mem. Founder—8.
B. Pr. Ed. Co., Va., Sept. 20, 1845. Educ. Priv. Sch. Lynchburg Mil. Col.; Randolph-Macon Col.; Stud. Med., Med. Col. Va. 1865; Univ. of Va. 1866; Grad. M. D. Univ. City N. Y. 1867; Charter Mem. 1870; Hon. Mem. 1892. Present every sess. since organization; Secty. continuously (except 1883) 1870-1909; Treas. 1873-1883. Founder Va. Med. Mo. 1874; Changed Semi-Mo. 1896.

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Eichelberger, Charles Preston, Staunton, Augusta Co., Va.—10.
B. Staunton, Va., 1870. Educ. Staunton Mil. School. Grad. M. D. Univ. of Va. 1896. Brd. Sept., 1896. Elec. 1901. Ex-Res. Phy. to N. Y. Skin and Cancer Hosp. Wom. Hosp. of N. Y. and N. Y. Eye and Ear Inf.

Eley, Lemuel Leslie, Crittenden, Nansemond Co., Va.—2.
B. Chuckatuck, Va., 1871. Grad. M. D. Univ. of Md. 1892. Brd. May, 1892. Elec. 1905. Mem. Sea. Med. Soc.

Ellett, Andrew Symington, Christiansburg, Montgomery Co., Va.—6.
Grad. M. D. Univ. of South, Tenn., 1901. Brd. June, 1902. Elec. 1905.

Elliott, P. B., Blacksburg, Montgomery Co., Va.—6.
Grad. M. D. Col. Phys. and Surg., Balt., April, 1895. Brd. May, 1895. Elec. 1900.

Ellis, Thomas Harding, Montebello, Nelson Co., Va.—10.
B. Amherst Co., Va., Feb. 14, 1863. Grad. M. D. Med. Col. Va. 1884. Elec. 1891.

Emerson, George Oliver, Bachelor's Hall, Pittsylvania Co., Va.—5.
B. Callands, Va. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. 1898. Elec. 1901. Present 1901.

Epperson, Ernest Egbert, Abingdon, Washington Co., Va.—9.
B. Campbell Co., Va., May 26, 1878. Grad. M. D. Univ. Col. of Med., Richmond, 1905. Brd. June, 1905. Elec. 1905. Present 1905.

Epperson, Paul Stevenson, Stovall, Halifax Co., Va.—6.
B. Stovall, Va., Oct. 23, 1885. Educ. Chester Spgs. Acad. Grad. M. D. Med. Col. Va. 1907. Brd. June, 1907. Elec. 1908. Mem. Omega-Upsilon Phi Frat.

Estill, Andrew Davieson, Lexington, Rockbridge Co., Va.—10.
B. Tazewell, Va., April 22, 1854. Stud. Med. Univ. Va. 1888-'91. Grad. M. D. Jeff. Med. Col. 1890. Brd. 1890. Elec. 1890. Att. Sess. six. Hlth. Offi. Rockbridge Co. Ex-Chm. Brd. of Hlth. Lexington, Va.

Etheridge, Henry Shaw, Port Norfolk, Norfolk Co., Va.—2.
B. Currituck Co., N. C., Oct. 10, 1839. Educ. Va. Col. Inst., Portsmouth, and Olden Place, Dinwiddie Co., Va. Grad. M. D. Eclec. Med. Inst., Cincinnati, Ohio, April, 1861. Elec. 1898. Mem. Brd. Hlth. Norfolk Co., Va.

Eubank, Charles Dickinson, Vinton, Roanoke Co., Va.—6.
B. Bedford Co., Va., June 2, 1859. Educ. Sunnyside H. Sch., Bedford City and Univ. of Va. Grad. M. D. Col. Phy. and Surg., Balto., 1884. Elec. 1904. Att. Sess. five.

Evans, Allen Davidson, Cambria, Montgomery Co., Va.—6.
B. Christiansburg, Va., 1868. Educ. Christiansburg Acad. Grad. M. D. Univ. of Va. 1904. Brd. June, 1904. Elec. 1905.

Evans, William, Norfolk, Norfolk Co., Va.—2.
B. Westtown, N. Y., Jan. 23, 1867. Educ. State Nor. Sch., Geneseo, N. Y. Grad. M. D. Col. Phy. and Surg. N. Y. 1890. Brd. 1902. Elec. 1902. Mem. Am. Med. Assn.

Everett, John Coleman, Nelly's Ford, Nelson Co., Va.—10.
B. Keswick, Albemarle Co., Va., Sept. 21, 1862. Educ. priv. tut. and priv. schls. Studied Med. at Univ. of Va. 1882, 4. Prac. Med. Prior to Ex. Brd. Elec. 1905. Treas. Nelson Co. Med. Soc. Rep. from Nelson Co. in House of Del. Mem. Co. Brd. of Hlth. Phy. and Surg. to Co. Almshouse.

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Ewell, Jesse, Ruckersville, Greene Co., Va.—7.
Grad. M. D. Wash. Univ. Sch. of Med., Balto., 1876. Elec. 1879. Present 1879, 1882. Resigned. Re-elected 1893. Present 1893-'99, 1900-1-2-3-4-6. Rec'd. 4th prize for Essay—History of Med. and Surg. in Va., 1897. Charter Mem. N. E. Va. Med. Soc. Pres. Pied. Med. Soc., 1906-7. Papers for Soc., The Use of Blisters in Pneumonia, 1899. Other Papers in various Jours.

Ewing, James Shelburne, Jonesville, Lee Co., Va.—9.
B. Ewing, Lee Co., Va., Oct. 30, 1874. Educ. Milligan Col., Tenn. Grad. M. D. Louisville Med. Col. 1903. Brd. June, 1904. Elec. 1905. Med. Ex. N. Y. and Mut. L. Ins. Cos. Surg. to Kelly & Irvine Mines.

Ezekiel, Gerald A., Yonkers, Westchester Co., N. Y.
B. Richmond, Va. Educ. Richd. High School. Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908. Present 1908. Int. Riverside Hosp., Yonkers, N. Y., 1908-'09. Papers, Preparation and Genl. Outline of Mic. and Anal. Work for Country Doctor, 1907.

Fadeley, George B., Falls Church, Fairfax Co., Va.—8.
B. Baltimore, Md., Oct. 8, 1861. Educ. Univ. Sch. for Boys, Balto., Md. Grad. M. D. Univ. of Md., Balto., 1889. Brd. 1889. Elec. 1889. Mem. Fairfax Co. Med. Soc. Post-Grad. Course Med., Surg. and Bact. Johns Hopkins Univ.

Fahrney, William Edgar, Timberville, Rockingham Co., Va.—7.
Grad. M. D. Univ. of Md. April, 1897. Brd. Sept., 1897. Elec. 1897.

Fauntleroy, Claybrook, Dragonville, King and Queen Co., Va.—1.
Grad. M. D. Univ. Pa. 1882. Elec. 1888.

Feild, Edward E., Norfolk, Norfolk Co., Va.—2.
B. Greenesville Co., Va., April 11, 1855. Grad. M. D. Univ. Va. 1879. Elec. 1884. Present 1888, 1908. Pres. Norfolk Med. Soc. Dept. Quar. Off. Paper for Soc., Yellow Chills, 1884; Other Papers, Case of Pyemia folowing Gonorrhea, 1890; Necrosis of Bone, 1891; Author of Essay on "Apendicitis," receiving Dr. Hunter McGuire's Prize of $100, 1894. Councilor 1908-9.

Ferguson, Meade, Richmond, Henrico Co., Va.—3.
B. Appomattox, Va., March 17, 1869. Educ. M. S. of Va., Poly. Inst. and Ph. D. Univ. Goettingen. Elec. Asso. Mem. 1908. Present 1908. Mem. Am. Pub. Hlth. Assn.; of Soc. Am. Bact.

Ferguson, Robert Thrift, Richmond, Henrico Co., Va.—3.
B. Albemarle Co., Va., Dec. 23, 1877. Educ. Randolph-Macon Acad., Bedford City, Va., and Va. Poly. Inst., Blacksburg, Va. Grad. M. D. Univ. Col. Med., Richmond, 1906. Brd. June, 1906. Elec. 1906. Res. Phy. St. Luke's Hosp., Richmond, 1906-'07.

Ferguson, William Frank, Marytown, McDowell Co., W. Va.
B. Salem, Va., Aug. 18, 1873. A. B. of Salem Col. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1904. Mem. McDowell Co. Med. Soc.; of Med. Assn. of W. Va., and of Am. Med. Assn.

Ferry, Edward L. W., Millers Tavern, Essex Co., Va.—1.
B. Miller's Va., May 10, 1873. Educ. Bedford Acad. Grad. M. D. Med. Col. Va. 1900. Brd. Dec., 1900. Elec. 1901.

Fields, Alpheus, Gilmerton, Norfolk Co., Va.—2.
B. Lenoir Co., N. C., Aug. 1, 1867. Educ. Univ. of N. C. and Univ. Va. Grad. M. D. Jeff. Med. Col., Phila., 1887. Brd. 1895. Elec. 1898. Mem. Sea. Med. Assn.

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Fields, Marshall C., Independence, Grayson Co., Va.—5.
B. Grayson Co., Va., Feb. 9, 1870. Educ. Old Tavern Acad. Grad. M. D. Med. Col. Va. 1898. Brd. Aug., 1898. Elec. 1899. Mason.

Finch, Adam Tyree, Chase City, Mecklenburg Co., Va.—4.
B. Chase City, Va., 1872. B. S. of Va. Poly. Inst. 1893. Grad. M. D. Univ. Va. 1896. Brd. June, 1896. Elec. 1897. Inst. Clin. Med. 1896. Prof. Phy. and Comp. Mat. Med. 1898-1901. Univ. Va. Res. Phy. Buffalo Lithia Springs 1899-1902.

Firebaugh, Thomas Clinton, Harrisonburg, Rockingham Co., Va.—7.
B. Rockingham Co., Va., Oct. 12, 1868. Grad. M. D. Univ. of Va. 1894. Brd. 1894. Elec. 1899. Present 1899. Co. (Rockingham) Phy. Coroner Harrisonburg and County. Secty. Rockingham Med. Soc. Mason.

Fisher, Andrew C., Emmerton, Richmond Co., Va.—1.
Grad. M. D. Med. Col. Va. 1885. Elec. 1885.

Fisher, Ernest C., Richmond, Henrico Co., Va.—8.
B. Powhatan Co., Va., Oct. 23, 1875. Educ. High Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1900. Brd. June, 1900. Elec. 1904. Present 1904, 8. Mem. Richmond Acad. Med. and Surg.

Fisher, John B., Midlothian, Chesterfield Co., Va.—8.
B. New Kent Co., Va., Aug. 30, 1868. Educ. Univ. Va. Grad. M. D. Med. Col. Va. 1892. Brd. April, 1892. Elec. 1892. Present 1893-'94. 1908. Res. Phys. City Almshouse Hosp., Richmond, 1892.

Fitzgerald, Robert Scott, Richmond, Henrico Co., Va.—8.
B. Aug. 28, 1876. Educ. Pub. Sch. and McCabe's Univ. Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1905. Brd. Dec., 1905. Elec. 1907. Mem. Am. Med. Assn.

Flagg, William Chandler, Ruther Glen, Caroline Co., Va.—1.
Grad. M. D. Med. Col. Va. 1881. Elec. 1904.

Flannagan, L. E., Charlottesville, Albemarle Co., Va.—7.
Grad. M. D. Univ. Va. 1884. Elec. 1885.

Flannagan, Roy Knight, Charlottesville, Albemarle Co., Va.—7.
B. Albemarle Co., Va., Nov. 23, 1870. Educ. High Sch. and Univ. of Va. Grad. M. D. Univ. of Va. June, 1894. Brd. June, 1894. Elec. 1900. Present 1900.

Fletcher, Frank, Jenkins' Bridge, Accomac Co., Va.—1.
Grad. M. D. Jeff. Med. Co. March, 1869. Elec. 1894.

Flippin, James Carroll, University, Albemarle Co., Va.—7.
B. Lunenburg Co., Va., Jan. 26, 1878. Educ. Grad. High Sch. and Stud. Univ. of Va. Grad. M. D. Univ. of Va. 1901. Brd. Dec., 1906. Elec. 1907. Mem. Pied. Med. Soc.; of Doctors' Club, Charlottesville; Adj. Prof. Clin. Med. Univ. of Va.; Phy. to same.

Foley, David Oswald, Mount Jackson, Shenandoah Co., Va.—7.
B. The Plains, Va., 1871. Educ. High Sch. Grad. M. D. Univ. of Md., Balto. 1896. Brd. June, 1896. Elec. 1905.

Forbes, Herbert Oliver, Meherrin, Lunenburg Co., Va.—4.
B. Buckingham, Va., Sept. 27, 1878. Grad. M. D. Med. Col. Va. 1904. Brd. Dec., 1904. Elec. 1906.

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Ford, William C., Woodstock, Shenandoah Co., Va.—7.
B. Surry, Va., 1866. Educ. High Sch. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1896. Brd. Sept., 1897. Elec. 1907. Mem. Shen. Co. Med. Assn.

Fordham, George, Milton, Cabell Co., W. Va.
B. New York, N. Y., March 4, 1879. Educ. Pub. and Priv. Schs. Brooklyn, N. Y. Ph. G. N. Y. Col. of Phar. 1897. Grad. M. D. Univ. of Va. 1907. Brd. June, 1907. Elec. 1907.

Forrer, Daniel Atwell, Red Hill, Albemarle Co., Va.—7.
B. North Garden, Albemarle Co., Va., 1872. Educ. Staunton Mil. Acad,. Oakland Acad. and Univ. of Va. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. Dec., 1901. Elec. 1902. Mem. Al. Assn. Univ. Col. of Med., Richmond; of Am. Med. Assn.; Ex. Instr. in Opth. Univ. Col. of Med. Ex. Res. Phy. Richmond Eye, Ear, Nose and Throat Inf. Formerly Asst. to Dr. Jos. A. White, Richmond.

Fortune, Robert Edward, Damascus, Washington Co., Va.—9.
B. Buncombe Co., N. C., Nov. 29, 1870. Educ. Trinity Col. N. C. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1903. Mem. S. W. Va. Med. Soc.

Fosque, George Lee, Onancock, Accomac Co., Va.—1.
B. Onancock, Va., Jan. 22, 1877. Educ. Margaret Acad. Grad. M. D. Jeff. Med. Col., Phila., 1901. Brd. 1901. Elec. 1905.

Foster, Littleberry Stainback, Norfolk, Norfolk Co., Va.—2.
B. Mathews Co., Va., Feb. 23, 1856. Educ. Randolph-Macon Col. Grad. of Chem. Grad. M. D. Univ. City of N. Y. 1879. Elec. 1887. Present 1887, 1894-'97. Mem. Brd. Direc. E. (Va.) State Hosp. Mem. Aux. Brd. World's Fair (1893) Mgrs. Ex-Supt. Pub. Schls. Mathews Co. Ex-Mem. Med. Ex-Brd. Va. Late Supt. E. (Va.) State Hosp.

Foster, W. Brownley, Richmond, Henrico Co., Va.—3.
B. Richmond, Va. Educ. B. S. Richmond Col. Grad. M. D. Med. Col. Va. 1901. Brd. June, 1901. Elec. 1902. Present 1902-'08. Mem. Rich. Acad. of Med. and Surg.; of Am. Med. Assn.; Dem. of Hist. and Phy. Chem. Med. Col. Va.

Fowlkes, Francis Vaughan, Burkeville, Nottoway Co., Va.—4.
B. Amelia Co., Va., Oct. 15, 1867. Grad. M. D. Univ. of Md., 1887. Brd. 1887. Elec. 1907.

Fox, Albert C., Waynesboro, Augusta Co., Va.—10.
B. Jacksonville, Ala. Educ. Catawba Col. Grad. M. D. Univ. City N. Y. 1873. Elec. 1883. Present 1884-5-9, 1894. Phys. to Alum Springs, Rockbridge Co., 1886.

Fox, Charles Bickley, Monterey, Highland Co., Va.—10.
B. Richmond, Va., April 16, 1872. Educ. Priv. Sch. and Rich. Col. Grad. M. D. Univ. of Va. June, 1899. Brd. June, 1899. Elec. 1901.

Fox, J. Francke, Bluefield, Mercer Co., W. Va.
B. North Carolina 1863. Educ. King's Mountain Mil. Acad. Grad. M. D. Univ. City N. Y. 1886. Brd. April, 1886. Elec. 1890. Present 1892-'94. Lived in N. C. 1886-1890, when ret. to Va.

Frazer, John Decker, Za, Orange Co., Va.—8.
B. Lahore, Orange Co., Va., May 5, 1876. Educ. Fredericksburg Col. and Richmond Col. Grad. M. D. Univ. Col. Med., Richmond, 1902. Brd. June, 1902. Elec. 1903.

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Frazier, Henry Bowen, Graham, Tazewell Co., Va.—9.
Grad. M. D. Col. Phy. and Surg., Balto., 1897. Brd. April, 1897. Elec. 1904.

Freed, John William, Staunton, Augusta Co., Va.—10.
B. Waynesboro, Va., Oct. 16, 1874. B. A. Roanoke Col. Grad. M. D. Univ. of Va. June, 1901. Brd. June, 1901. Elec. 1902. Present 1902.

Freeman, Allen Weir, Richmond, Henrico Co., Va.—3.
B. Lynchburg, Va., Jan. 7, 1881. Educ. B. S. of Richmond Col. 1899. Grad. M. D. Johns Hopkins Med. Schl. 1905. Brd. June, 1905. Elec. 1908. Present 1908. Mem. Rich. Acad. Med. and Surg.; of Am. Pub. Hlth. Assn.; Asst. Com. Hlth., Va.

French, John Herndon, 15 W. 51st Street, New York, N. Y.
Grad. M. D. Univ. Va. 1886. Elec. 1886.

Frost, Henry, Marshall, Fauquier Co., Va. Res. Hon. Mem.—8.
B. Charleston, S. C., 1839. B. A. of S. C. Col. Grad. M. D. Med. Col. St. of S. C. Elec. 1882. Hon. Mem. 1906. Present 1882-'83. Pres. N. E. Va. Med. Soc.

Fry, Richard Watson, Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Univ. Va. 1872. Elec. 1885.

Fugate, Charles Radford, Rye Cove, Scott Co., Va.—9.
Grad. M. D. Med. Col. Va. 1907. Brd. June, 1907. Elec. 1908.

Fuller, Louis Edward, Axton, Henry Co., Va.—5.
B. Callands, Va., Feb. 8, 1872. Educ. High Sch. and Bethel Mil. Acad. Grad. M. D. Univ. of Louisville, Ky., 1894. Brd. April, 1894. Elec. 1901. Was Mem. Henry Co. Med. Soc. (extinct).

Fuller, Rawley H., Clover, Halifax Co., Va.—6.
B. Pittsylvania Co., Va., Aug. 5, 1879. Educ. Danville Mil. Inst. Grad. M. D. Univ. Col. of Med., Richmond, 1905. Brd. June, 1905. Elec. 1905. Mem. Asso. Surg. So. Ry. Co. Surg. So. Ry. Co. Med. Ex. Home L. Ins. Co.

Fultz, George S., Broadway, Rockingham Co., Va.—7.
Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1908.

Fuqua, William Beckwith, Radford, Montgomery Co., Va.—6.
B. Fluvanna Co., Va., Oct. 9, 1873. Grad. M. D. Univ. Col. of Med., Richmond, 1897. Brd. June, 1897. Elec. 1898. Surg. Dora Fur. Co., Pulaski, Va.

Gale, Jr., John Samuel, Ivor, Southampton Co., Va.—2.
B. Isle of Wight Co., Va., Nov. 27, 1882. Educ. Smithfield M. and Fem. Inst. Grad. M. D. Univ. Col., Med., Richmond, 1907. Brd. Dec., 1907. Elec. 1907. Mem. Southside Va. Med. Soc.

Gale, Joseph A., Roanoke, Roanoke Co., Va. Res. Hon. Mem.—6.
B. Norfolk, Va., Dec. 3, 1842. Educ. Norfolk Mil. Acad. Grad. M. D. Bellevue Hosp. Med. Col. 1866. Elec. 1871. Pres. 1903-'04. Hon. Mem. 1904. Att. Sess. nine. Mem. Roan. Med. Soc. Internat. Assn. of Ry. Surg. Chief Surg. N. & W. R. R.

Gale, Sparrell Simmons, Roanoke, Roanoke Co,, Va.—6.
B. Salem, Va., July 20, 1876. B. A. Grad. M. D. Col. Phy. and Surg., N. Y., 1901. Brd. June, 1901. Elec. 1903. Mem. Roan. Med. Soc. Supt. and Surg.-in-charge Miners' Hosp. No. 1, Welch, W. Va. Asst. Surg. N. & W. Ry. Co.

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Gamble, Robert Allen, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Col. Phy. and Surg., St. Louis, Mo., 1896. Brd. June, 1902. Elec. 1904.

Gammon, Landon Haynes, Bristol, Washington Co., Va.—9.
B. Sullivan Co., Tenn., 1861. Grad. M. D. Univ. Va. and Univ. Md. 1892. Brd. April, 1892. Elec. 1893.

Gannaway, William L., R. F. D. 2, Abingdon, Washington Co., Va.—9.
B. Wythe Co., Va., May 5, 1870. Educ. Wm. and Mary Col. Grad. M. D. Univ. of South, Tenn., 1901. Brd. Dec., 1901. Elec. 1905. Mem. S. W. Va. Med. Assn.

Garcin, Ramon D., Richmond, Henrico Co., Va.—8.
Grad. M. D. Med. Col. Va. 1885. Brd. 1887. Elec. 1889. Adj. Prof. Med. Med. Col. Va. Ex-Pres. Church Hill (Richmond) Med. Soc.

Garlick, James H., Staunton, Augusta Co., Va. Res. Hon. Mem.—10.
B. New Kent Co., Va., Sept. 19, 1842. Educ. Amelia Acad. and Univ. of Va. Grad. M. D. Univ. of Va. 1865. Elec. 1899. Hon. Mem. 1906. Present 1899, 1908. Asst. Surg. C. S. A. Asst. Phys. E. St. (Va.) Hosp. ten years, appointed 2d Asst. Phys. Central State Hosp. April 15, 1897, and 1st Asst. Phys. same April, 1899.

Garnett, Richard Wingfield, Charlottesville, Albemarle Co., Va.—7.
B. Charlottesville, Va., Feb. 17, 1881. Educ. Locust Dale Acad. and Univ. of Va. Grad. M. D. Univ. of Md., Balto., 1904. Brd. June, 1904. Elec. 1905. Present 1905, 6, 8. Mem. Pied. Med. Soc.; of Doctors' Club, Charlottesville; Med. Ex. Home and Am. Nat. L. Ins. Cos.; Asst. Phy. W. St. Hosp. 1906-'09; Inst. in Derm. Univ. of Va. Papers, Infant Feeding, 1906; Chorea and Choreiform Movements, 1907.

Garrett, John Randolph, Roanoke, Roanoke Co., Va.—6.
B. Franklin Co., Va., Jan. 19, 1869. Educ. Haleford Acad. and Stuart Nor. Col. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1900. Present 1901-2-3-4-5. Mem. S. W. (Va.) Med. Soc., Roa. Acad. Med., Assn. Surg. N. & W. Ry., Am. Med. Assn. H. Surg. Nor. Prot. Hosp. 1898. Asst. to Drs. Driver and Cannaday, Eye, Ear, Nose and Throat prac. 1899.

Garrison, Manly Littleton, Front Royal, Warren Co., Va.—7.
B. Frederick Co., Va., March, 1835. Educ. Front Royal Acad. Grad. M. D. Med. Col. of Va. 1860. Elec. 1902. Papers for various journals.

Garthright, Robert H., Vinton, Roanoke Co., Va.—6.
B. Henrico Co., Va., April 4, 1858. Educ. Va. Agril. and Mech. Col. Grad. M. D. Med. Col. Va. 1885. Brd. 1885. Elec. 1889. Present 1889, 1891-'92.

Gary, B. Roscoe, Newport News, Warwick Co., Va.—1.
B. King Wm. Co., Va., Dec. 18, 1868. Educ. Aberdeen Acad. and Priv. Sch. Grad. M. D. Univ. Md. April, 1891. Brd. April, 1891. Elec. 1893. Present 1905-'08. Mem. (and Ex-Pres.) Newport News Med. Soc.; Sea. Med. Soc.; Am. Med. Assn.; Coroner Newport News; Surg. Newport News, Hampton and Old Point Ry. Co.; Surg. to Citizens Ry., Light and Power Co.

Gatewood, William K., Marion, Marion Co., S. C.
B. Middlesex Co., Va., March, 1836. Educ. Ridgeway Acad., Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1858. Elec. 1875. Att. Sess., several.

Gay, George Washington, Richmond, Henrico Co., Va.—3.
B. Scotland Neck, N. C., Aug. 7, 1881. Educ. Scotland Neck Mil. Sch. and Richmond Col. Grad. M. D. Univ. Col. of Med., Richmond, 1899.

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Brd. June, 1897. Elec. 1903. Mem. Church Hill Med. Soc. (Richmond); of Rich. Acad. Med. and Surg.; Am. Med. Assn.; U. S. Exam. Surg.; Med. Ex. Woodmen of Amer. Papers, Typhoid Malarial Fever, 1902; Effect of Alcohol on System, 1903.

Gee, Everett W., Richmond, Henrico Co., Va.—3.
B. Lunenburg Co., Va., 1865. Grad. M. D. Med. Col. Va. 1889. Brd. 1888. Elec. 1893. Res. Phy. Rich. City Almshouse 1888; Resigned; Moved to Lunenburg Co. Phy. Lunenburg Co. Almshouse 1888-'94. Med. Ex. Hart. L. Ins. Co.

George, Sumpter, Danville, Pittsylvania Co., Va.—5.
Grad. M. D. Med. Dept. Univ. City of N. Y. 1886. Elec. 1886.

Gibson, Edwin Lacy, Staunton, Augusta Co., Va.—10.
B. Waynesboro, Va., 1869. Educ. Univ. of Va. Grad. M. D. Univ. of Md. 1894. Brd. Oct., 1894. Elec. 1902. Surg. B. & O. Ry., Staunton, Va.

Gibson, James M., Suffolk, Nansemond Co., Va.—2.
B. Bucyrus, Ohio, 1854. Educ. at Wooster Univ., Wooster, Ohio. Grad. M. D. Columbus Med. Col., Columbus, O., 1874. Brd. June, 1898. Elec. 1899.

Gildersleeve, John Robinson, Richmond, Henrico Co., Va. Founder. Res. Hon. Mem.—3.
B. Charleston, S. C. Grad. M. D. Med. Col. Va. 1864. Charter Mem. 1870. Att. Sess. all but one since. V.-Pres. 1891. Pres. 1900. Hon. Mem. 1901. Com. on Nom. 1897-1900. Jud. Com. 1898-1906. Del. House of Del. A. M. A. 1902-3. Coun.-at-large 1908. Mem. Am. Med. Assn.; of Assn. Med. Offi. Army and Navy of Con. (Pres 1903); Asst. Surg. C. S. A. Sur. Browne-Harman Camp, U. C. Vet.

Giles, George Othello, Penhook, Franklin Co., Va.—5.
B. Patrick Co., Va., 1872. Educ. Nat. Nor. Univ. Ohio. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1899.

Giles, James Carter, Chatham, Pittsylvania Co., Va.—5.
B. Chatham, Va., May 25, 1876. Educ. High School. Grad. M. D. Univ. Col. of Med., Richmond, 1903. Brd. June, 1903. Elec. 1903. Mem. Pitt. Co. Med. Soc.

Gillespie, Rees Bowen, Tazewell, Tazewell Co., Va.—9.
B. Tazewell, Va., March 8, 1861. Grad. M. D. Med. Col. Va. 1884. Elec. 1896.

Gill, Stonewall Jackson, Roanoke, Roanoke Co., Va.—5.
B. Lowesville, Va., Dec. 16, 1861. Educ. Harrisonburg H. Sch. Grad. M. D. Vanderbilt Univ. 1886. Brd. Sept., 1886. Elec. 1904. Mem. Bedford Co. Med. Soc. Post-Grad. of Georgetown Univ., D. C. Papers, Pneumonia, Bedford Co. Med. Soc., 1904.

Gill, Thomas Flatford, Marshall, Fauquier Co., Va.—8.
B. Garrisonville, Stafford Co., Va. Educ. Pub. High Schl. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908.

Gill, William Wallace, Richmond, Henrico Co., Va.—3.
B. Petersburg, Va., April 8, 1881. Educ. McCabe's Sch., Petersburg Acad., and Rich. Col. Grad. M. D. Univ. Col. of Med., Richmond, 1903. Brd. June, 1903. Elec. 1905. Mem. Petersburg Med. Fac. and 2d Vice-Pres. 1905-'06.

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Gills, William J., Farmville, Prince Edward Co., Va.—4.
B. Prin. Ed. Co., July 18, 1878. Educ. Randolph-Macon Col. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1901. Present 1901-'08. Surg. Third Bat., 70th Reg. of Va. Vols.

Gilmer, A. Kemper, Lebanon, Russell Co., Va.—9.
B. Howardsville, Va., Sept. 23, 1873. Grad. M. D. Med. Col. of Va. 1896. Brd. June, 1896. Elec. 1901. Mem. Russell Co. Brd. Hlth.

Gilmer, Bertram Hensel, Townsend, Northampton Co., Va.—1.
B. Island Ford, Va., April 19, 1874. Educ. Oak Hill Acad., McGaheysville, Va. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1904. Elec. 1904.

Gilmer, Henry D., Elkton, Rockingham Co., Va.—7.
B. Rockingham Co., Va., May 5, 1872. Educ. Oak Hill Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1904. Brd. June, 1904. Elec. 1906. Present 1906.

Givens, Hezekiah Frank, Glen Wilton, Botetourt Co., Va.—10.
B. Feb. 25, 1872. Educ. Fairview Acad., Va. Col. Course at Randolph-Macon. Grad. M. D. Univ. Col. of Med., Richmond, 1896. Brd. June, 1896. Elec. 1903.

Givens, Robert Tilden, Longdale, Alleghany Co., Va.—10.
B. Va., Sept. 27, 1877. Educ. Va. Poly. Inst. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. 1902. Elec. 1904. Present 1904.

Glasgow, Robert, Lexington, Rockbridge Co., Va.—10.
B. Fincastle, Va., 1857. Educ. Wash. and Lee Univ. Grad. M. D. Univ. of Va., 1878. Post-Grad. Bellevue Hosp. Med. Col. 1883; also N. Y. Poly. 1887-'88. Elec. 1887. Present 1889-'90-1-2-4. Ex-Mem. Med. Exam. Brd. Va.

Glassell, Robert T., Bowling Green, Caroline Co., Va.—1.
B. Bowling Green, Va., 1854. Educ. Fredericksburg Mil. Acad. Grad. M. D. Univ. of Md. 1886. Prac. prior to Med. Ex-Brd. in 1885. Elec. 1889. Present 1891-'94, 1908.

Glover, Perkins, Arvonia, Buckingham Co., Va.—10.
Grad. M. D. Med. Col. Va. 1901. Brd. June, 1901. Elec. 1904.

Gochnauer, Frederick, Upperville, Fauquier Co., Va.—8.
B. Upperville, Va., April 11, 1879. Educ. B. A. Richmond Col. Grad. M. D. Univ. Col. of Med., Richmond, 1903. Brd. June, 1904. Elec. 1905. Mem. Am. Med. Assn. Interne Va. Hosp., Richmond, 1903-'04. Med. Ex. for Mut. Ben. and Union Cent. L. Ins. Cos.

Godwin, Isaac Robinson, Fincastle, Botetourt Co., Va. Res. Hon. Mem.—10.
B. Fincastle, Va., Aug. 8, 1837. Educ. Wash. and Lee Univ. Grad. M. D. Med. Col. Va. March, 1860. Elec. 1873. Hon. Mem. 1906. Att. Sess. eleven. V.-Pres. 1877. Mem. Roa. Med. Soc. Asst. Surg. C. S. A. Papers, Advances in Anatomy and Physiology, 1887.

Goldback, Leo John, 2217 E. Pratt Street, Baltimore, Md.
B. Baltimore, Md., Jan. 2, 1883. Educ. B. S. of Lloyd's Col. Grad. M. D. Univ. of Md. 1905. Brd. Dec., 1905. Elec. 1906. Mem. Balto. Med. Soc.; of Med. and Chir. Fac. of Md. Asst. Surg. Presby. Eye, Ear and Throat Inf. and to Nose and Throat Dept. of Univ. Hosp.

Good, Joseph Eugene, New Market, Shenandoah Co., Va.—7.
Grad. M. D. Jeff. Med. Col., Phila., 1884. Prac. prior to St. Brd. Elec. 1906.

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Goode, J. Gates, Cheriton, Northampton Co., Va.—1.
Grad. M. D. Univ. Col. of Med., Richmond, May, 1899. Brd. June, 1899. Elec. 1899. Phy. City (Richmond) Almshouse, 1899-1900.

Goodman, Robert S., Zion, Louisa Co., Va.—8.
Grad. M. D. Med. Col. Va., 1899. Brd. June, 1899. Elec. 1906.

Goodman, W. H. L., Franklin, Southampton Co., Va.—2.
Elec. 1879.

Goodwin, Benjamin Chapman, Buckner, Louisa Co., Va.—8.
B. Long Creek, Va., Jan. 18, 1843. Stud. Med. Univ. Va. Grad. M. D. Med. Col. Va. 1865. Brd. 1896. Elec. 1908.

Gordon, Hiram Wakefield, Madison, Madison Co., Va.—7.
B. Madison Co., Va., Dec. 11, 1832. Educ. Mad. Math. Acad. Grad. M. D. Univ. Pa. 1858. Elec. 1897. Present 1897. Mem. Pied. Med. Assn.

Gordon, William A., Elkton, Rockingham Co., Va.—7.
Grad. M. D. Col. P. and S., Baltimore, 1893. Brd. 1893. Elec. 1896.

Gordon, William S., Richmond, Henrico Co., Va.—3.
B. Raleigh, N. C., 1858. Grad. M. D. Med. Col. Va. 1879. Spec. Course Jeff. Med. Col. and Univ. Pa. 1879-'80. Elec. 1886. Ex-Pres. Richmond Acad. Med. and Surg. Phy. Richmond City Jail. Ex-Prof. Phy. and Prof. Med. and Clin. Med. Univ. Col. of Med., Richmond. Med. Off. Hustings Court, Richmond. Mem. Tri-St. and Am. Med. Assns. On staff Phys. to City Hosp.

Gorman, Edward A., Alexandria, Alexandria Co., Va.—8.
Educ. St. John's Mil. Acad. Grad. of Pub. Schl. and Spen. Bus. Col. Grad. M. D. Georgetown Univ., D. C., 1898. Brd. Nov., 1899. Elec. 1902. For. Res. Phy. Wash. Asy. Hosp., D. C. Pres. Brd. Hlth. and Hlth. Offi. Vis. Phy. Crittenden Children's Home, Old Folks' Home, Widows' Home and Almshouse.

Gorsline, Isaac T., Richmond, Henrico Co., Va.—8.
B. Bethel, Ontario, Canada, Aug. 20, 1870. Educ. Picton H. Sch. and Col. Inst., Picton, Ont. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905. Inst. and Clin. Asst. Prac. of Med., Med. Col. of Va.

Gott, Lewis E., Falls Church, Fairfax Co., Va. Res. Hon. Mem.—8.
Grad. M. D. Univ. Md. 1860-'61. Elec. 1892. Hon. Mem. 1906.

Gouldin, John Milton, Tappahannock, Essex Co., Va.—1.
B. Baltimore, Md., December 1, 1878. Educ. Bowling Green and Aberdeen Acads. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904.

Gover, Robert William, Gore, Frederick Co., Va.—7.
Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. 1899. Elec. 1904.

Graham, James Monroe, Broken Bow, Custer Co., Neb.
B. Patrick Co., Va., Dec. 14, 1878. Educ. Oxford Acad. and Mt. Nor. Sch. Grad. M. D. Md. Med. Col. 1902. Brd. June, 1902. Elec. 1903. Won. Col. Medal and Harry Gross Surg. prize.

Graham, John Thompson, Wytheville, Wythe Co., Va.—9.
B. Pulaski Co., Va., May 18, 1864. Educ. Wytheville Male Acad., Hampden-Sidney Col. Grad. M. D. Univ. of Va. 1888. Brd. July, 1888. Elec. 1890. Present 1890, 1, 2, 3, 4. Orator 189.3 Councilor 1908. Mem. Medico-Legal Soc. N. Y. S. W. (Va.) Med. Soc. Papers for Soc., Puerperal Eclampsia, 1891; What Shall be Done with Our Criminal Lunatics? 1891.

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Grandy, Charles Rollin, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., 1871. Educ. B. A. Univ. of Va. Grad. M. D. Univ. of Va. 1892. Brd. 1898. Elec. 1898. Present 1898-'99, 1900-1-2-3-4-5-6-7-8. Mem. Am. Med. Assn.; of Sea. Med. Soc. (and Ex-Pres.) Norfolk Med. Soc.; Am. Pub. Hlth. Assn.; of St. Brd. Hlth. Path. to St. Vincent Hosp., Norfolk, Va. Papers for Soc., A Modification of the Mosquito Theory, 1900; Serum Therapy, 1901.

Grant, Henry Colles, R. F. D. 4, Waynesboro, Augusta Co., Va.—10.
B. Middleburg, Va., June 28, 1881. Educ. H. Sch. and Pantops Acad. Grad M. D. Univ. of Va. 1904. Brd. Dec., 1905. Elec. 1906. Mem. Augusta Co. Med. Soc.

Graves, George Berry, Valentine, Jeff. Davis Co., Tex.
B. Hurt, Va., Dec. 22, 1881. Educ. Pub. Sch., Pantops Acad. and Rich. Col. Grad. M. D. Univ. of South 1903. Brd. June, 1903. Elec. 1903. Mem. Jno. S. Cain Med. and Surg. Soc.; Am. Med. Assn.; W. Va. Med. Soc.; McDowell Co. Med. Soc.; Asst. Dem. Chem. Univ. Col. of Med., Rich., 1901, 2, and of Univ. of South 1903, 4. Grad. Dent. and Phar. For. Int. Home for Incur., Richmond, and Colum. Hosp., D. C.

Graves, Stanley Hope, Norfolk, Norfolk Co., Va.—2.
B. Thorn Hill, Orange Co., Va., May 20, 1872. Educ. Priv. Schs. and Wm. and Mary Col. Grad. M. D. Med. Col. of Va. 1894. Brd. May, 1894. Elec. 1897. Phys. Florence Crittenden Home. Asst. Surg. N. and W. R. R. Med. Ex. Ger. L Ins. Co., N. Y.

Gray, Alfred Leftwich, Richmond, Henrico Co., Va.—3.
B. Palmyra, Va., Oct. 2, 1873. Educ. Univ. of Va. Grad. M. D. Univ. of Va. 1897. Brd. fall, 1897. Elec. 1899. Present 1897, 9, 1902-3-8-4. Coun. 3d Dist. and clerk of Ex-Coun. 1908; Mem. and V-Pres. Rich. Acad. Med. and Surg.; of Am. Med. Assn.; Tri-St. Med. Assn.; (and V.-Pres.) Am. Roent. Ray Soc.; Prof. Phy. 1903-9 Univ. Col. of Med., Richmond; in charge X-Ray Dept. and Vis. Phy. Va. Hosp.

Graybill, Percy Kline, Fincastle, Botetourt Co., Va.—10.
B. Amsterdam, Va., 1879. Educ. B. C. of Bot. Nor. Col. and Richmond Col. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1906. Present 1906.

Greear, Clabe Baker, Honaker, Russell Co., Va.—9.
B. Graham, Va., Nov. 30, 1877. Educ. Pub. Schls. Grad. M. D. St. Univ. Iowa 1902. Brd. 1906. Elec. 1908.

Green, Peyton B., Wytheville, Wythe Co., Va.—9.
B. Staunton, Va., May 27, 1861. Educ. Roanoke Co. Grad. M. D. Univ. Va. 1885. Brd. 1886. Elec. 1885. Present 1886-7-8, 1890-1-2-4. Chm. Sec. on Chem. Med. Exam. Brd. Va. until Nov., 1894. City Phy. Wytheville, etc. Papers for Soc., Leader Dis. Treatment of Acute and Chronic Dysentery, 1891.

Greene, Louis Storrow, Alexandria, Alexandria Co., Va.—8.
B. Columbus, Ga., Nov. 19, 1872. Educ. Bellevue H. Sch. and Univ. of Va. Grad. M. D. Univ. of Va. 1895. Brd. Dec., 1900. Elec. 1901.

Greever, Charles William, Tazewell, Tazewell Co., Va.—9.
B. Burk's Garden, Va., July 27, 1852. Educ. Rural Retreat Acad. Att. Univ. of Md. 1876-'78. Grad. M. D. Chattanooga Med. Col. 1901. Prac. prior to Exam. Brd. Elec. 1901.

Gregory, Floyd Jackson, Keysville, Charlotte Co., Va.—6.
B. Keysville, Va. Grad. M. D. Vanderbilt Univ. 1901. Brd. June, 1901. Elec. 1904. 1st V.-Pres. 1907-'08.

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Greiner, Alfred Bryson, Rural Retreat, Wythe Co., Va.—9.
B. Marion, Va., July, 1874. A. B. Roanoke Col. Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1897. Present 1899, 1908. Adj. Prof. Mat. Med. and Ther. Med. Col. Va.; Med. Ex. Ladies of Maccabees.

Grice, Joseph, Portsmouth, Norfolk Co., Va.—2.
Educ. Univ. of Va. Grad. M. D. Univ. of Va. 1893. Brd. Sept., 1895. Elec. 1896. Present 1898, 1908. H. Surg. N. Y. City Hosp. until 1895. Pres. Brd. Hlth. Portsmouth, Va.

Griffith, R. Sumter, Basic City, Augusta Co., Va.—10.
B. Friendship, Anne Arundel Co., Md., 1861. Educ. Md. Agric. Col. Grad. M. D. Col. Phys. and Surg., Balto., 1886. Prac. prior to 1885. Elec. 1898. Present 1898-9, 1900-1-2-3-4-5-6-7. 2d V.-Pres. 1901, 2. Mem. Legis. Com. Pres. Aug. Co. Med. Soc. 1908. Surg. N. & W. and C. & O. R. R., and Cor. and Hlth. Offl. Basic City. Mem. Internat. Assn. Ry. Surgs. Med. Ex. Sev. L. Ins. Cos. Ex-Mayor Basic City.

Grinnan, St. George Tucker, Richmond, Henrico Co., Va.—3.
B. Madison Mills, Va., April 6, 1870. Educ. Locust Dale Acad. and Univ. of Va. Grad. M. D. Univ. of Va. 1901. Brd. June, 1901. Elec. 1903. Mem. Rich. Acad. Med. and Surg. Inst. in Dis. of Children Med. Col. of Va.

Grizzard, James Alexander, Drewrysville, Southampton Co., Va.—2.
B. Grizzard, Sussex Co., Va., Dec. 8, 1881. Educ. Randolph-Macon Col. Grad. M. D. Balto. Med. Col. 1906. Brd. June, 1906. Elec. 1906. Mem. Phi Chi Med. Frat.

Grubbs, Ernest L., Eagle Rock, Botetourt Co., Va.—10.
Grad. M. D. Univ. Col. of Med., Richmond, Va., 1904. Brd. June, 1905. Elec. 1907.

Guin, Henry Lewis, R. F. D., Meadville, Halifax Co., Va.—6.
Grad. M. D. Med. Col. Va. 1899. Brd. Dec., 1900. Elec. 1906.

Gwathmey, Lomax, Norfolk, Norfolk Co., Va. Res. Hon. Mem.—2.
B. Norfolk, Va., Nov. 5, 1869. Grad. M. D. Univ. of Va. 1889, and Col. P. and S., N. Y., 1890. Brd. 1893. Elec. 1894. Present 1898, 1902-4-5-8. Pres. 1905-'06. Hon. Mem. 1906. Mem. Norfolk Med. Soc.; of Sea. Med. Assn.; of So. Surg. and Gyn. Assn.; of Am. Med. Assn.; Ex-House Phy. Bellevue Hosp., N. Y.; Ex-Pres. of Norfolk Med. Soc.; of Sea. Med. Assn.

Gwathmey, William, Beulahville, King William Co., Va.—3.
B. Beulahville, Va., Oct. 9, 1875. Educ. Richmond Col. Grad. M. D. Med. Col. Va. 1898. Brd. 1898. Elec. 1908. Prac. Med. in Aug. Co. 1900-'01. Int. City (Richmond) Hosp. 1898-'99. Loc. Ex. all old line Ins. Cos.

Hackley, James Bernard, Purcellville, Loudoun Co., Va.—8.
Grad. M. D. Univ. of South 1902. Brd. June, 1902. Elec. 1904.

Hagy, James Heiskell, Dorchester, Wise Co., Va.—9.
B. Washington Co., Va., 1878. Educ. King Col. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1906. Mem. S. W. Va. and Wise Co. Med. Socs. Phy. to Colonial Coal and Coke Co.

Haile, James S., Chatham, Pittsylvania Co., Va.—5.
Grad, M. D. Med. Dept. Univ. of Md. 1886. Elec. 1886.

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Hains, Frank Waters, Petersburg, Dinwiddie Co., Va.—5.
Grad. M. D. Univ. of Md. April, 1888. Brd. Sept., 1892. Elec. 1894.

Haislip, George W., Lorton Valley, Fairfax Co., Va.—8.
B. Fairfax Co., Va., March 6, 1858. Educ. Pub. Sch. Alexander Acad., Va., Agri. and Mech. Col. Grad. M. D. Jeff. Med. Col. 1882. Elec. 1885. Present 1887. Mem. Fairfax Co. Med. Soc.

Hales, Barksdale, Middletown, Frederick Co., Va.—7.
B. Halifax Co., Va., July 27, 1858. Grad. M. D. Med. Col. Va. 1879, and Bellevue Hosp. Med. Col. 1884. Elec. 1880. Present 1880.

Hall, Walter Conner, Welch, McDowell Co., W. Va.
Grad. M. D. Univ. of Va. 1897. Brd. Sept., 1897. Elec. 1904.

Haller, John P., Pocahontas, Tazewell Co., Va.—9.
Grad. M. D. Med. Col. Va. 1882. Elec. 1883.

Hammond, A. Watson, Amsterdam, Botetourt Co., Va.—10.
B. Raleigh C. H., W. Va., March 16, 1856. Stud. Med. under Dr. Henry Dean 1880, att. Med. Lect. Col. Phy. and Surg., Balto., Md., 1882-'83; again 1885-'86. Grad. M. D. Ky. Sch. of Med. 1891; prac. Med. Tazewell Co., 1883—priod to Brd. Elec. 1903. Ex. for N. W. L. Ins. Co. and Frat. Relief Assn., Richmond, Va.

Hamner, George Pinckard, Schuyler, Nelson Co., Va.—10.
B. Faber's Mills, Va., May 23, 1873. Educ. Pub. Schls. Grad. M. D. Univ. of Va. 1903. Brd. June, 1903. Elec. 1903. Mem. Pi Mu Frat.

Hancock, Frank Horace, Norfolk, Norfolk Co., Va.—2.
B. Chesterfield Co., Va., 1873. Educ. Richmond Col. Grad. M. D. Univ. Col. Med., Richmond, 1896. Brd. spring 1896. Elec. 1896. Present 1896-7-8-9. Res. Phys. St. Luke's Home 1896. Mem. Am. Med. Assn.; of Norfolk Med. Soc.; of Sea. Med. Assn.; Hlth. Offl. Norfolk Co. during smallpox epidemic, 1899, and since. Papers for Soc., Dentition, 1898.

Hanger, Franklin McCue, Staunton, Augusta Co., Va.—10.
B. New Hope, Va., July 10, 1862. Grad. M. D. Univ. of Va. June 27, 1883. Elec. 1894. Present 1898.

Hankins, George Archer, Williamsburg, James City Co., Va.—3.
Grad. M. D. Med. Col. Va. 1873. Elec. 1904.

Hansbrough, Lyle F., Front Royal, Warren Co., Va.—7.
B. Fauquier Co., Va., 1879. Educ. Randolph-Macon Acad. Grad. M. D. Univ. of Va. 1901. Brd. Dec., 1901. Elec. 1905.

Hargrave, Edward Thomas, Norfolk, Norfolk Co., Va.—2.
B. Nansemond Co., Va., June 28, 1871. Educ. High Sch. and Ph. G. Md. Col. of Phar., Balto., Md., 1893. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900; Balto. Brd. Phar., 1893; Brd. Phar. D. C., 1893; Va. Brd. Phar., 1894; U. S. Naval Phar. Brd., 1895; U. S. Pub. Hlth. and Mar. Hosp. Ser., 1901. Elec. 1903. Mem. Norfolk Med. Soc.; of Am. Med. Assn.; of Sea. Med. Assn.

Harman, Jabez M., Floyd, Floyd Co., Va.—5.
B. Floyd Co., Va., Sept. 3, 1866. Educ. Mountain Nor., Hylton, Floyd Co., Va. Grad. M. D. Med. Dept. Univ., Louisville, Ky., 1891. Brd. April, 1892. Elec. 1895. Att. Sess., four. Att. N. Y. Post-Grad. Sch. and Hosp. 1898-'99 and 1900. Ex. several L. Ins. Cos. Secy. Floyd Co. Brd. Hlth.

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Harnsberger, Stephen, Catlett, Fauquier Co., Va.—8.
B. Willow Spout, Va., July 5, 1852. Educ. Bethel Mil. Acad. and Emory and Henry Col. Stud. Med. Col. Phys. and Surg., Balto. Grad. M. D. Ky. School of Med. 1877. Post-Grad. Col. Phys. and Surg., Balto., 1883-5. Elec. 1893. Present nearly all since. Councilor 1908. 3 gold medal prizes for Essays. Mem. Am. Med. Assn.; of Tri-St. Med. Assn.; of Med. Soc. N. Va.; of Med. Soc., D. C. Ex. old line Ins. Cos.

Harris, George Thornhill, James River, Amherst Co., Va.—10.
B. Richmond, Va., Oct. 17, 1875. B. A. Richmond Col. Grad. M. D. Ky. Sch. Med. June, 1898. Brd. June, 1900. Elec. 1901. Present 1901.

Harris, John Edward, Berryville, Clarke Co., Va.—7.
B. Brunswick Co., Va., May 15, 1875. Grad. M. D. Med. Col. of Va. 1900. Elec. 1900. H. Phy. St. Vincent's Hosp., Norfolk, Va., 1900, 1901.

Harris, Percy, Norwood, Nelson Co., Va.—10.
B. Greenway, Va., March 18, 1881. Educ. Kennon High School, Amherst, Va., and Brown's Univ. School, Charlottesville, Va. Grad. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905.

Harris, William A., Spotsylvania, Spotsylvania Co., Va.—1.
B. Spotsylvania, Va., Dec. 28, 1877. Educ. Spotsylvania Seminary. Grad. M. D. Med. Col. of Va. 1901. Brd. June, 1901. Elec. 1902.

Harris, William Lett, Norfolk, Norfolk Co., Va.—2.
B. Brunswick Co., Va., Jan. 25, 1871. Educ. Grad. Randolph-Macon Col. Grad. M. D. Med. Col. Va. 1893. Brd. 1893. Elec. 1896. Mem. Norfolk Med. Soc.

Harrison, George Blight, Downings, Richmond Co., Va.—1.
Grad. M. D. Univ. of Md. 1905. Brd. June, 1906. Elec. 1907.

Harrison, George Tucker, 132 W. 10th Street, New York, N. Y. Non-Res. Hon. Mem.
A. M. of Univ. of Va. Grad. M. D. Univ. Va. Elec. Hon. Mem. 1884. Present 1884-5-9, 1893, 1900-'08. Papers for Soc., several. Other papers, numerous. Ed. Gaillard's Med. Jour.

Harrison, Henry William, Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Col. Phys. and Surg., N. Y., 1882. Med. Col. Va. 1884. Elec. 1889. Present 1889.

Harrison, Isaac Carrington, Clarksville, Mecklenburg Co., Va.—4.
B. Amelia Co., Va., Dec. 18, 1870. Educ. Richmond Col. and B. A. Univ. of Va. Grad. M. D. Univ. of Va., 1895. Brd. May, 1895. Elec. 1899. Present 1899. Inst. Chem. Univ. of Va. 1895-'97. Dem. Chem. and Lect. Tox. Univ. Col. of Med., Richmond, 1897-'98.

Harrison, John Sidney, Elm City, Wilson Co., N. C.
B. Norfolk, Va., Dec. 29, 1877. Educ. Richmond Col. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1903.

Harrison, Virginius W., Richmond, Henrico Co., Va.—3.
B. Richmond, Va., March 21, 1865. A. B. 1883, A. M. 1884, Emory and Henry Col. Grad. M. D. Univ. Va. 1887. Brd. 1887. Elec. 1887. Present 1887, 9, 1894, 8, 1904, 8. V.-Pres. Rich. Acad. Med. and Surg. 1891-3-5. Mem. Am. Med. Assn. For. Res. Phys. St. Luke's Home. Prof. Mat. Med. and Ther. Univ. Col. Med., Richmond; Mem. Tri-St. Med. Assn.; Phys. Va. Hosp. 1900; Med. Dir. Va. Conf. Orphanage.

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Harshbarger, Charles P., Port Republic, Rockingham Co., Va.—7.
Grad. M. D. Ky. Sch. of Med. 1892. Brd., fall 1892. Elec. 1894.

Hart, Edward Roland, Suffolk, Nansemond Co., Va.—2.
B. Edgecombe Co., N. C., Jan. 8, 1879. Educ. Univ. of N. C. and Horner's Sch., Va. Grad. M. D. Univ. of Md., Balto., 1901. Brd. Dec., 1902. Elec. 1905.

Hartman, Walter F., Swoope, Augusta Co., Va.—10.
Grad. M. D. Univ. of Va. 1889, and Bellevue Hosp. Med. Col. 1890. Brd. 1891. Elec. 1893. Present 1893.

Hartsook, Charles R., Tulia, Swisher Co., Tex.
Educ. Emory and Henry Col. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904.

Hartsook, N. E., Honaker, Russell Co., Va.—9.
Grad. M. D. Med. Col. Va. 1895. Brd. May, 1895. Elec. 1907.

Hartwell, James E., Crawford, Denver Co., Neb.
B. Franklin Co., Va., 1851. Att. Med. Col. Va. 1882-'83. Grad. M. D. Balt. Med. Col. 1891. Elec. 1887. Present 1889, 1892. U. S. Ex. Pen. Surg.

Harvie, Lewis Edwin, Danville, Pittsylvania Co., Va. Res. Hon. Mem. Founder.
B. Richmond, Va., May 15, 1843. Educ. Va. Mil. Inst. Grad. M. D. Med. Col. Va. 1867. Charter Mem. 1870. Present 1870, 1880, 1892-3-4-5-7-8, 1904-'08. V.-Pres. 1880. Pres. 1897-'98. Hon. Mem. 1898. Mem. Danville Acad. of Med., Am. Med. Assn., and Nat. Assn. of R. R. Surg.

Harwood, Ashton, Binn's Hall, Charles City Co., Va.—3.
B. Charles City Co., Va., March 31, 1874. Grad. M. D. Med. Col. Va. 1902. Brd. Dec., 1902. Elec. 1903. Res. Phy. Sheltering Arms Hosp. 1902.

Harwood, William E., Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Med. Col. Va. 1873. Prac. prior to Exam. Brd. Elec. 1908.

Hatton, Edward Alexander, Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., June, 1869. Educ. Norfolk and Hanover Acads. Grad. M. D. Col. Phys. and Surg., Med. Dept., Columbian Col., N. Y. City, 1891. Brd. April, 1892. Elec. 1900. Mem. Sea. Med. Soc.; of Portsmouth Med. Soc.; of Norfolk Med. Soc. Ex. several L. Ins. Cos.

Hawes, Walker Aylett, Charlottesville, Albemarle Co., Va.—7.
Grad. M. D. Univ. Va. 1866. Prac. K. Wm. Co., Va., from 1867 to 1871; moved to N. Y. City. Elec. 1906.

Hawks, Robert Thomas, P. O., R. F. D., 2, Carson, Dinwiddie Co., Va. (but lives in Sussex Co., Va.)—4.
B. Stony Creek, Sussex Co., Va., Feb. 27, 1883. Educ. Chester Spgs. Acad. Grad. M. D. Med. Col. Va. 1907. Brd. June, 1907. Elec. 1907.

Hazen, Charles Morse, Bon Air, Chesterfield Co., Va.—3.
B. Ala. 1866. M. A. Richmond Col. Grad. M. D. Med. Col. Va. 1897. Brd. Sept., 1897. Elec. 1898

Head, Luther Jerrell, Jerrell, Caroline Co., Va.—1.
B. Penola, Va., March 6, 1866. Educ. Pub. and Priv. Schs. and Univ. Va. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1904. Present 1904-8.

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Healy, Merritt Wood, Bena, Gloucester Co., Va.—1.
Grad. M. D. Univ. Col. Med., Richmond, 1906. Brd. June, 1906. Elec. 1908.

Hedges, Halstead Shipman, Charlottesville, Albemarle Co., Va.—7.
B. West Orange, N. J., Sept. 30, 1867. M. A. Univ. Va. 1890. Grad. M. D. Univ. Va. 1892. Brd. 1893. Elec. 1900. Secty. Albemarle (Co.) Brd. of Hlth. Int. N. Y. City Hosp. 1892-'93. H. Phys. Orange (N. J.) Mem. Hosp. 1895-'96.

Henderson, Estelle H., Newbern, Pulaski Co., Va.—9.
B. Wabash, Giles Co., Va., Dec. 4, 1871. Grad. M. D. Univ. Col. of Med., Richmond, Va., 1898. Brd. June, 1898. Elec. 1899.

Henderson, John M., Williamsburg, James City Co., Va.—8.
B. Northampton Co., Va., Sept. 16, 1869. Grad. M. D. Med. Col. Va. April, 1895. Brd. May, 1895. Elec. 1896. Mem. Med.-Legal Soc. N. Y. Third Asst. Phys. Cent. State Hosp., Petersburg, Va., 1895-'96.

Henderson, Thomas Brantley, Crewe, Nottoway Co., Va.—8.
B. Loftis, Va., June 6, 1883. Educ. Pub. Sch. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1906. Ex-Mem. Patrick Henry Med. Soc., ex-Surg. Dan. and West. Ry.

Henderson, William F., Blacksburg, Montgomery Co., Va.—6.
B. Blacksburg, Va., Oct. 10, 1853. Educ. Preston and Olin Inst. and St. (Va.) Agric. Col. Grad. M. D. Wash. and Lee Univ. 1876. Elec. 1877. Att. Sess. fifteen. Surg. State Agri. Col.

Hening, Thomas Scott, Jefferson, Powhatan Co., Va.—1.
B. Jefferson, Va., July 26, 1872. Educ. at home and Edgewood Sch. Grad. M. D. Med. Col. of Va. 1894. Brd. spring 1894. Elec. 1899. Present 1899-1-2-6-8. Mem. Inter. Assn. of Ry. Surgs.; Ches. Co. Med. Soc.; Co. (Ches.) Brd. of Hlth; Phy. and Surg. Ches. Mining Co.; Coroner; Surg. Pow. and Farm. Ry.; Res. Phys. Sheltering Arms Hosp., Paint Creek, W. Va., 1894-'97.

Henkel, Alfred D., Winchester, Frederick Co., Va.—7.
B. New Market, Va., April 20, 1861. Educ. Poly. Inst., New Market, Va. Grad. M. D. Univ. of Pa. 1887. Brd. 1887. Elec. 1905. Mem. Med. Soc. of Fred. and Clarke Cos.

Henkel, Casper C., New Market, Shenandoah Co., Va. Res. Hon. Mem.—7.
B. Rockingham Co., Va., April 17, 1835. Educ. New Market Acad. Grad. M. D. Univ. Pa. 1857. Elec. 1879. Hon. Mem. 1906. Present 1880-'89. Vice-Pres. 1880-'89. Surg. C. S. A. 1862. Surg. Third. Brig., Jackson's Div., Jackson's Corps, 1862-'65.

Henkel, Haller H., Staunton, Augusta Co., Va.—10.
B. New Market, Va., 1852. A. M. New Market Poly. Inst. 1873. Taught same Inst. 1874-'75. Stud. Law Univ. of Va. 1876. Stud. Med. Univ. of Va. 1877. Grad. M. D. Univ. of N. Y. 1878. Elec. 1885. Int. Bellevue Hosp. 1878-'80. Surg. B. & O and C. & O. R. R.'s. Med. Dir. Inter. and Equit. L. Ins. Cos., Staunton, Va.

Henry, Hugh Carter, Keysville, Charlotte Co., Va.—6.
B. October 31, 1875. Educ. Miller School, Ala. (Grad.). Grad. M. D. Med. Col. Va. 1896. Brd. Va. June, 1897, and of Md. 1898. Elec. 1897. Mem. Charlotte Co. Brd. Hlth. Med. Ex. several L. Ins. Cos. while in Charlotte Co.; Res. Phy. Old Dom. Hosp., 1896-'97; 1st Asst. Phy. Cent. St. (Va.) Hosp. 1903.

Henson, James William, Richmond, Henrico Co., Va.—8.
Grad. M. D. Med. Col. Va. 1889. Brd. 1889. Elec. 1890. Adj. Prof. Anat. Med. Col. Va.; Asst. Demons. Anat. 1894-'96. Prof. Anat.

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1896-1904. Dem. of Orth. 1899-1903. Prof. Gen.-Urin. Surg. 1903-'04. Prof. of Surg. Anat. 1904-'09. Lect. on Prin. of Surg. 1904-'09 Univ. Col. Med., Richmond. Mem. Tri-State Med. Soc. Surg. Wm. Byrd Hosp.

Herbert, Eugene M., Roanoke, Roanoke Co., Va.—6.
B. Norfolk Co., Va., April 2, 1868. Educ. Charlotte Hall Mil. Acad. Grad. M. D. Atlanta Col. of Phy. and Surg. 1902. Brd. June, 1902. Elec. 1902. Post-Grad. course 1900-2-3.

Hewitt, Richard N., Evington, Campbell Co., Va.—6.
B. Campbell Co., Va., Aug. 7, 1827. Educ. Home Sch. and Emory and Henry Col. Stud. Med. Univ. Va. Grad. M. D. Univ. Pa. 1849. Elec. 1871. Att. Sess. several.

Hicks, James Robert, Cove Creek, Tazewell Co., Va.—9.
Grad. M. D. Col. Phys. and Surg., Baltimore, 1885. Elec. 1893.

Hicks, Robert I., Warrenton, Fauquier Co., Va. Res. Hon. Mem.—8.
Grad. M. D. Univ. Pa. 1856. Elec. 1882. Hon. Mem. 1906. Present 1888-'89, 1893-4-8, 1908. Mem. Ex. Brd. Va. 1889-'94.

Hiden, Joseph Hart, Pungoteague, Accomac Co., Va.—1.
B. Fluvanna Co., Va., Jan. 6, 1866. Educ. Ky. Univ. Att. Louisville Bapt. Theo. Sem. 1889-'90. Grad. M. D. Med. Col. Va. 1897. Brds. Va. and N. C. June, 1897. Elec. 1904. Papers, Antiseptic Treatment of Typhoid Fever; Prevalence and Treatment of Endometritis; Prophylactic Treatment of Puerperal Fever; Reflections upon Origin of Life and Theory of Natural Selection; Placenta Praevia.

Higginbotham, James Nelson, Richlands, Tazewell Co., Va.—9.
B. Cove Creek, Va., June 8, 1882. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. W. Va. Brd. Nov., 1906. Elec. 1908. Ex. Mut. L. Ins. Co.

Hill, Emory, Eighteenth and Race Streets, Philadelphia, Pa.
B. Scottsville, Va., Sept. 8, 1883. A. B. (1904) Columbia Univ. Grad. M. D. Med. Col. Va. 1907. Brd. June, 1907. Elec. 1907. Res. Phys., Orth. Hosp. and Inf. for Nerv. Dis., Phila., Pa., 1907-'08.

Hill, Hugh Hodge, Locust Dale, Madison Co., Va.—7.
Grad. M. D. Univ. of Pa. 1895. Brd. 1897. Elec. 1900.

Hillsman, Blanton L., Richmond, Henrico Co., Va.—8.
B. Amelia Co., Va., Dec. 6, 1872. Educ. Pub. and Priv. Schs. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec. 1899. Present 1899, 1908. Mem. Rich. Acad. Med. and Surg. First Asst. Dem. Anat. Univ. Col. Med., Rich., 1899. Papers, Treatment of Typhoid Fever, June, 1899.

Hillsman, John A., Richmond, Henrico Co., Va. Res. Hon. Mem.—8.
B. Amelia Co., Va., June 18, 1834. Grad. M. D. Jeff. Med. Col. 1859. Elec. 1873. Hon. Mem. 1906. Present 1887, 1894, 1899, 1908. Mem. Rich. Acad. Med. and Surg. Asst. Surg. 44th Va. Regt., C. S. A.

Hinchman, John Doherty, Richmond, Henrico Co., Va.—8.
B. Richmond, Va., March 24, 1884. Educ. Rich. High. Schl. Rock Hill Col. (B. A. 1904, M. A. 1907), Ellicott City, Md. Grad. M. D. Med. Col. Va. 1907. Brd. Dec., 1907. Elec. 1908. Present 1908. Res. Phy. Rich. City Hosp. 1907-'08.

Hinchman, John H., Richmond, Henrico Co., Va.—8.
Grad. M. D. Med. Co. Va. 1879. Elec. 1883.

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Hines, Brainard W., Walcot, Floyd Co., Va.—5.
B. Sidon Grove, Rockbridge Co., Va., March 1, 1834. Grad. M. D. Winchester Med. Col. 1861. Elec. 1903.

Hinton, Samuel Alexander, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Cin. Col. of Med. and Surg. 1864. Elec. 1904.

Hirschler, David Lee, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., Aug. 20, 1880. Educ. Norfolk Acad., Norfolk High Sch. and Univ. of Va. Grad. M. D. Univ. of Va. 1901. Brd. June, 1901. Elec. 1905. Present 1905. Mem. Norfolk Med. Soc.; of Sea. Med. Assn.; of Am. Med. Assn.

Hisey, Frederick M., Edinburg, Shenandoah Co., Va.—7.
Grad. M. D. Col. Phys. and Surg., Baltimore, 1881. Elec. 1889.

Hite, Benjamin Haney, Hollydale, Lunenburg Co., Va.—4.
Educ. Randolph-Macon Col. and Univ. Va. Grad. M. D. Jeff. Med. Col. 1859. Elec. 1872.

Hix, Nicholas Flood, Wise, Wise Co., Va.—9.
B. Pr. Ed. Co., Va., Dec. 8, 1876. Educ. Male State Nor., L. I. Grad. M. D. Univ. of Va. 1900. Brd. June, 1900. Elec. 1905. Mem. Wise Co. Med. Soc.

Hoback, Andrew J., Roanoke, Roanoke Co., Va.—6.
B. Floyd Co., Va., Jan. 27, 1832. Educ. Pub. Sch. and Floyd Inst. Grad. M. D. Phila. Col. Med. 1857. Elec. 1885. Att. Sess. two. Mem. Floyd Co. Med. Soc.

Hobson, Jr., Edwin Lafayette, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., June 18, 1869. Educ. Univ. of Va. Grad. M. D. Univ. Col. of Med., Richmond, 1895. Brd. 1896. Elec. 1897. Mem. Rich. Acad. Med. and Surg. Inst. Prin. of Surg. and Clin. Asst. to Chair of Clin. Surg. Univ. Col. Med. Rich. Pres. Al. Assn., Univ. Col. of Med. 1896-'97. Surg. and Phys. in charge Tredegar Iron Works, Rich. For. Res. Phys. St. Luke's Home, Rich.

Hobson, Samuel Wilson, Newport News, Warwick Co., Va.—1.
B. Mt. Airy, Powhatan Co., Va., Jan. 26, 1871. Educ. Homestead Acad., Chesterfield Co., Va., and Richmond Col. Grad. M. D. Med. Col. Va. 1891. Brd. April, 1891. Elec. 1896.

Hodges, J. Allison, Richmond, Henrico Co., Va.—3.
B. Little River Acad., N. C., Oct. 8, 1858. Educ. Home and Davidson Cols., N. C. Grad. M. D. Univ. Va. 1883. Brd. April, 1893. Elec. 1893. Present 1893-4-6-7-8-9, 1904-5-8. Secty., Proc., Dean and Pres. 1893-1905, and Prof. Nerv. and Ment. Dis., Univ. Col. Med., Richmond. Med. Dir. S. A. L. Ins. Co. since 1900. Phy. in Chf. Hygeia Hosp. Neurol. to Va. Hosp.

Hoen, Adolph G., Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. of Md. 1872. Brd. 1902. Elec. 1904.

Hoffman, Richard McCord, Woodstock, Shenandoah Co., Va.—7.
B. Edinburg, Va., Feb. 25, 1880. Educ. B. A. and M. A. Univ. of Va. Grad. M. D. Univ. of Va. 1907. Brd. Dec., 1907. Mem. Shen. Co. Med. Soc.

Hoffman, Samuel J., Columbia Furnace, Shenandoah Co., Va.—7.
Grad. M. D. Univ. of Md. 1877. Elec. Mem. 1884.

Hogan, Clifton Hopewell, Roanoke, Roanoke Co., Va.—6.
B. Milwaukee, Wis., Aug. 31, 1880. Educ. Emerson Inst., D. C. Grad. M. D. Univ. Va. 1903. Brd. June, 1905. Elec. 1906.

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Hoge, Albert Hammond, Hoge's Store, Giles Co., Va.—9.
B. Hoge's Store, Va., Aug. 17, 1885. Grad. M. D. Univ. Col. Med. 1908. Brd. June, 1908. Elec. 1908. H. Surg. St. Luke's Hosp. 1908-'09.

Hoge, Jr., M. D., Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Feb. 2, 1861. Educ. Hampden-Sidney Col., Univ. Va. Stud. Med. Univ. Berlin. Grad. M. D. Univ. Heidelberg, Ger., 1886. Brd. 1886. Elec. 1886. Asst. Rec. Secty. each Sess. except 1891. Mem. Rich. Acad. Med. and Surg. Phys. Shel. Arms. Hosp. Prof. Clin. Diag. Univ. Col. Med., Richmond. Author Diagnostic Urinalysis, 1896; Outlines of Histology, 1897. Att. Phys. Found. Hosp.

Holladay, Gray Godwin, Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., 1870. Att. Univ. of Va. Grad. M. D. Bellevue Hosp. Med. Col., N. Y., 1893. Brd. Sept., 1895. Elec. 1896. Coroner Portsmouth. Ex-House Surg. Charity Hosp., N. Y. and N. Y. Mat. Hosp. Ex-House Phys. N. Y. Hosp. for Nerv. Dis.

Holladay, Lewis, Orange, Orange Co., Va.—8.
B. Rapidan, Va., Dec. 25, 1868. A. B. Hampden-Sidney Col. 1890. Grad. M. D. Univ. of Va. 1896. Brd. Sept., 1896. Elec. 1897. Present 1896-7-8, 1900-'08. Mem. Pied. and Rap. Val. Med. Socs.; of Am. Med. Assn.; Secy. Orange Co. Brd. Hlth.; Local Surg. C. & O. Ry. Papers, Puerperal Fever, 1897.

Holladay, Waller Morton, Hampden-Sidney, Pr. Edward Co., Va.—4.
Grad. M. D. Hosp. Col. Med., Louisville, Ky., 1885. Elec. 1887.

Holland, Griffin W., Eastville, Northampton Co., Va.—1.
B. Eastville, Va., 1874. Educ. Onancock Acad. Grad. M. D. Univ. of Va. 1896. Brd. June, 1896. Elec. 1902. Mem. Northampton Co. Brd. Hlth.

Holland, Job Gustave, Holland, Nansemond Co., Va.—2.
B. Nansemond Co., Va., May 7, 1861. Educ. Suffolk Col. Inst. Grad. M. D. Med. Col. Va. 1884. Elec. 1889. Present 1890-'8. Mem. Va. Brd. Hlth, Nansemond Co. Med. Ex. Penn. Mut., N. W. Mut., Trav., Equit., and other L. Ins. Cos.

Holley, Robert W., Inman, Wise Co., Va.—9.
B. Mendota, Va., June 14, 1877. Educ. Hamilton Inst. Grad. M. D. Med. Col. Va. 1899. Brd. Dec. 1901. Elec. 1902. Mem. Wise Co. Med. Soc. Surg. Va. Iron, Coal and Coke Co., and Va. & S. W. Ry. Co.

Holler, George F., Bridgewater, Rockingham Co., Va.—7.
Grad. M. D. Col. Phy. and Surg., Atlanta, Ga., 1901. Brd. Dec., 1901. Elec. 1906.

Holloway, Robert Green, Port Royal, Caroline Co., Va. Res. Hon. Mem.—1.
B. Caroline Co., Va., Nov. 18, 1832. Educ. Rap. Acad. Stud. Med. Univ. of Va. 1854, 5. Grad. M. D. Univ. Pa. 1856. Elec. 1886. Hon. Mem. 1905. Present 1886, 1894, 1908. Ex. Surg. Car. Co., C. S. A. Mem. Med. Ex. Brd. for S. W. Va. Dept. Furloughs, Details and Exemptions, C. S. A.; one of three Surgs. from Va. in W. C. S. Army. Coroner Car. Co. Del. Am. Med. Assn. 1888.

Holman, William M., Lee, Goochland Co., Va.—3.
Grad. M. D. Med. Col. Va. 1890. Brd. 1891. Elec. 1892.

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Holmes, Edward A., Chatham Hill, Smyth Co., Va.—9.
B. Tazewell Co., Va., 1873. Educ. Emory and Henry Col. Grad. M. D. Univ. of Va. 1897. Brd. June, 1897. Elec. 1901. Med. Ex. Mut. and Ger. L. Ins. Cos., N. Y.

Holmes, John Wm., Pulaski, Pulaski Co., Va.—9.
B. Barren Springs, Wythe Co., Va., Dec. 28, 1848. Educ. Draper's Val. Acad., Pulaski Co., Va., 1875-'78. Grad. M. D. Univ. Md. Sch. of Med., Balto., 1882. One year Univ. Hosp. Elec. 1885. Present 1885, 1892-4-6-7-9, 1901-4-5-6. Med. Ex. Staunton Mut. L. Assn. Con. Phy. and Surg. for past eight years.

Hooe, A. Barnes, 1220 Sixteenth Street, N. W., Washington, D. C.
B. K. Geo. Co., Va., April 12, 1871. Educ. High Sch. Bellevue, Va. Grad. M. D. Colum. Univ., D. C., 1896. Brd. June, 1906. Elec. 1906. Present 1906-'08. Inst. in Gyn. Geo. Wash. Univ. Mem. Am. Med. Assn. (and V.-Pres.) of Med. Assn., D. C.; of Med. Soc. D. C. (and Ex.-Pres.) Geo. Wash. Med. Soc.; of Clin. Soc., D. C. (and Ex-Pres.) Wash. Med. and Surg. Soc.; of Acad. of Sci. D. C.

Hooe, Jr., Robert Arthur, "The Savoy," 2803 Fourteenth Street, N. W., Washington, D. C.
B. K. Geo. Co., Va., July 21, 1880. Educ. Fredericksburg Col. Grad. M. D. Geo. Wash. Univ. 1906. Brd. June, 1906. Elec. 1906. Mem. House Staff Geo. Wash. Univ. Hosp.

Hooker, George Wesley, Bassetts, Henry Co., Va.—5.
B. Buffalo Ridge, Va., May 30, 1879. Educ. Danville Mil. Inst. Grad. M. D. Univ. of South, Tenn., 1904. Brd. June, 1905. Elec. 1905.

Hope, Frank S., Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., 1855. Educ. Pub. Sch. Grad. M. D. Univ. of Va., 1876. Elec. 1880. Mem. Portsmouth Med. Soc. Hlth Off. Portsmouth 12 years. Quar. Off. Eliz. River 3 years.

Hope, J. Wilton, Hampton, Elizabeth City Co., Va.—1.
Grad. M. D. Med. Col. Va. 1888. Brd. 1888. Elec. 1902.

Hopewell, Harry Tilden, Strasburg, Shenandoah Co., Va.—7.
B. Edinburg, Shen. Co., Va., Nov. 18, 1876. Educ. Edinburg Acad. Grad. M. D. Md. Med. Col., Balto., 1903. Brd. June, 1903. Elec. 1907. Mem. Shen. Co. Med. Soc.; of Kappa Psi Frat.

Hopkins, Benjamin Francis, Hot Springs, Bath Co., Va. Res. Hon. Mem. 10.
B. Louisa Co., Va., 1828. Educ. Priv. Sch. Grad. M. D. Univ. Va. and Jeff. Med. Col., Phila., 1855. Elec. 1872. Hon. Mem. 1906. Att. Sess. two. Surg. P. A. C. S.

Hopkins, Erasmus Guy, Richmond, Henrico Co., Va.—3.
Born Fredericksburg, Va., April 9, 1877. Educ. Fredericksburg Col. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1900. Elec. 1900. Present 1900-8. H. Surg. St. Luke's Hosp., Richmond, 1900-1; Mem. Rich. Acad. Med. and Surg.

Hopkins, Frank, Hot Springs, Bath Co., Va.—10.
B. Warm Springs, Va., April 26, 1871. Educ. Fishburne Mil. Sch. and Wash. and Lee Univ. Grad. M. D. Univ. Pa. 1895. Brd. 1895. Elec. 1896. Present 1897.

Hopkins, William Benjamin, Danville, Pittsylvania Co., Va.—5.
Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1908.

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Hornbaker, Frank Wandling, Occoquan, Prince William Co., Va.—8.
Educ. High Schls. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1901. Elec. 1908. Present 1908.

Horne, A. Fullen, Glade Spring, Washington Co., Va.—9.
B. Wash. Co., Va., Nov. 14, 1858. Educ. A. M. Emory and Henry Col. Stud. Med. Univ. Va. 1881-'82. Grad. M. D. Col. Phys. and Surgs., Balto., 1884. Elec. 1885. Present 1885-9, 1892.

Horsley, John Shelton, Richmond, Henrico Co., Va.—3.
B. Lovingston, Va., 1870. Educ. Univ. of Va. Grad. M. D. Univ. of Va. 1892. Brd. 1893. Elec. 1893. Resigned 1900. Re-elected 1903. Mem. (and Ex-V.-Pres.) So. Surg. and Gyn. Assn.; of Am. Med. Assn.; of Rich. Acad. of Med. and Surg.; Hon. Mem. N. Mex. S. S. Va., and S. W. Va. Med. Socs.; Prof. Prin. of Surg. and Clin. Surg. Med. Col. Va.; Surg. Mem. Hosp. One of authors Am. Prac. of Surg.

Horton, Milie Christopher, Butterworth, Dinwiddie Co., Va.—4.
B. Wakefield, N. C., April 15, 1875. Educ. Wakefield H. Sch., Thompson Sch. and Wake Forest, N. C. Grad. M. D. Univ. Col. of Med., Richmond, 1903. Brd. June, 1903. Elec. 1904. Mem. Am. Med. Assn. Grad. Ph. D. Univ. Col. Med., Richmond, 1902. Med. and Surg. Dir. Greenville and Dinwiddie Ry.

Hoskins, Robert Roy, Mathews, Mathews Co., Va.—1.
Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1904.

Hough, Theodore, University, Albemarle Co., Va.—7.
B. Front Royal, Va., June 19, 1865. Educ. Johns Hopkins Univ. A. B. 1886, Ph. D. 1893. Elec. Asso. Mem. 1908. Mem. Am. Phy. Soc. Papers, On Escape of Heart from Vagus Inhibition, Ergographic Studies in Neuromuscular Fatigue and Muscular Soreness.

Howard, Thomas Henry, Floyd, Floyd Co., Va. Res. Hon. Mem.—5.
B. Floyd Co., Va., Dec. 7, 1834. Grad. M. D. Jeff. Med. Col., Phila., March, 1861. Elec. 1874. Hon. Mem. 1906. Att. Sess. several. Surg. C. S. A.

Howe, Harry Dresser, Hampton, Elizabeth City Co., Va.—1.
B. Hampton, Va., Jan. 12, 1872. B. S. Cornell Univ. 1892. Grad. M. D. Univ. Pa. 1895. Brd. Sept., 1895. Elec. 1897. Present 1895-8, 1905, 8. Mem. Sea. Med. Soc.; Co. and Newport News Med. Soc.; of Med. Soc. Staff of Dixie Hosp.; of D. Hays Agnew Surg. Soc. Res. Phy. Phila. Hosp. Co. Phy. Eliz. City Co. Hlth. Offi. Hampton, Va. Papers: Bran Baths in Typhoid Fever; Diet in Private Practice.

Howle, Paul Williamson, Richmond, Henrico Co., Va.—3.
B. Sussex Co., Va., Aug. 13, 1874. Educ. Wm. and Mary Col. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. Va., June, 1899, and of W. Va. 1899. Elec. 1899. Mem. Al. Assn., Univ. Col. Med. Phy. and Surg. Great Kanawha Colliery Co. and to Diamond Mines.

Howlett, Howard Henry, Walkerton, King and Queen Co., Va.—1.
B. Washington, D. C., Nov. 8, 1883. Grad. Wash. H. Sch. 1901. Grad. M. D. Geo. Wash. Univ. 1907. Brd. Dec., 1907. Elec. 1908. Present 1908. Mem. Tidewater Med. Assn.

Hoy, W. Preston, Petersburg, Dinwiddie Co., Va.—4.
B. Petersburg, Va., Feb. 12, 1877. Educ. Petersburg High School and McCabe's Univ. School. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Int. E. St. Hosp.

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Hubbard, B. H. B., White Stone, Lancaster Co., Va.—1.
B. Lancaster Co., Va., Sept. 6, 1873. Educ. Wm. and Mary Col. Grad. M. D. Univ. of Md. 1895. Brd. 1895. Elec. 1904. Res. Phy. Univ. of Md. Hosp. 1895; Pres. Class 1895, Univ. of Md.

Hubbard, James Filmer, Esmont, Albemarle Co., Va.
B. Yorktown, Va., Dec. 5, 1875. Elec. Pub. Schls. Grad. M. D. Univ. Col. Med. 1908. Brd. June, 1908. Elec. 1908.

Hubble, John Edgar, Lordsburg, Los Angeles Co., Cal.
B. Smyth Co., Va., June, 1864. Educ. Emory and Henry Col. Grad. M. D. Univ. Va. 1891. Brd. Oct., 1891. Elec. 1891.

Hudgins, Robert Lester, Farmville, Prince Edward Co., Va.—4.
B. Buckingham Co., Va., Oct. 12, 1879. Grad. Mt. Zion High Sch. and Att. Rich. Col. 3 years. Grad. M. D. Univ. Col. of Med., Richmond, 1906. Brd. June, 1906. Elec. 1907. Amb. Surg., City Home Hosp., Richmond, 1906-7.

Hudnall, B. Ryland, Lignite, Botetourt Co., Va.—10.
B. Va. 1875. Educ. Fredericksburg Col. Grad. M. D. Med. Col. Va. 1899. Brd. June, 1899. Elec. 1905.

Hudson, Alvah Stoakley, West Point, King William Co., Va.—3.
B. King and Queen Co., Va., Aug. 25, 1879. Educ. Pub. Schls, Portsmouth (Va.) Acad., and West Point Mil. Acad.; Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907.

Hudson, William L., Luray, Page Co., Va.—7.
B. Luray, Va., 1851. Educ. Luray and Woodstock Acads. Grad. M. D. Louisville Med. Col. 1874. Elec. 1904. Secy. Co. (Page) Brd. of Hlth.; Coroner Page Co.; Local Surg. N. & W. Ry.

Huff, Isaac Eldridge, Roanoke, Roanoke Co., Va.—6.
B. Floyd Co., Va., May 26, 1866. Educ. Floyd C. H. Acad. and Glade Spring Acad. Grad. M. D. Col. Phys. and Surg., Balto., Md., April, 1892. Brd. April, 1892. Elec. 1895. Present 1898. Ex. several L. Ins. Cos. Mem. Floyd Co. Brd. of Hlth.; Mem. Confed. Pen. Brd. Att. Post-Grad. Course, N. Y., 1901.

Hughes, Rolfe Eldridge, Laurens, Laurens Co., S. C.
B. Wilmington, Va., May 5, 1868. Educ. Pub. Sch. and Miller's Acad. Grad. M. D. Univ. of Md. 1892. Brd. April, 1892. Elec. 1895. Present 1895-6-7. Mason. Pres. Brd. Hlth., Laurens, S. C. Ex-Pres., Ex-Secy., and Treas. Tri-State Med. Assn.

Hughes, Samuel Edward, Danville, Pittsylvania Co., Va.—5.
Grad. M. D. Col. Phys. and Surgs., Balto., Md., April, 1891. Brd. 1893. Elec. 1895.

Hughes, Thomas Jefferson, Saltville, Smyth Co., Va.—9.
Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec. 1902.

Hume, Benjamin Lowen, Barboursville, Cabell Co., W. Va.
B. Raccoon Ford, Culpeper Co., Va., Feb. 25, 1874. Educ. Fredericksburg (Va.) H. Sch. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Va. Phar. Brd. Oct., 1904. Elec. 1900. 3d Asst. Phy. Cent. St. Hosp., Petersburg, Va., 1900-2. 2d Asst. same 1902. Phar. same 3 years.

Hume, J. Thompson, Hinton, Summers Co., W. Va.
B. Culpeper, Va., 1855. Grad. M. D. Col. Phys. and Surg., Balto., 1887. Brd. 1888. Elec. 1898. Res. Phys. Woman's Hosp., Balto. Pres. Brd. Hlth., Summers Co., W. Va.

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Hume, Richard Caldwell, Brookneal, Campbell Co., Va.—6.
Grad. M. D. Univ. of Md. 1906. Brd. June, 1906. Elec. 1906. Res. Phy. Cent. State (Va.) Hosp. 1906-7.

Hundley, Morton Eldridge, Ridgeway, Henry Co., Va.—5.
B. Leatherwood, Va., March 20, 1875. Grad. M. D. Univ. Col. of Med. 1899. Brd. June, 1899. Elec. 1899. Present 1899. Mem. Henry Co. Med. Soc.

Hunter, Edmund Dozier, Norfolk, Norfolk Co., Va.—2.
B. Kempsville, Va., May 17, 1872. Educ. Priv. Schl. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1901. Brd. June, 1901. Elec. 1904. Mem. Norfolk Med. Soc.; of Sea. Med. Soc.; of Am. Assn. Med. Ex.; Med. Ex. Fid. Mut., Md., Greensboro; Sec. Cit., Ill., Chicago L. Ins. Cos. and sev. Accident and Health Ins. Cos.

Hunter, James Wilson, Jr., Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., April 30, 1878. Educ. M. A. Univ. Va. Grad. M. D. Univ. Va. 1901. Post-Grad. Harvard Med. School 1903. Brd. June, 1901. Elec. 1902. Mem. Norfolk Med. Soc.; of Sea. Med. Assn.; of Tri-State Med. Soc.; of Am. Med. Assn., and Am. Roent. Ray Soc. Med. Ex. Mut. L. Ins. Co.

Hurst, James A., Pennington Gap, Lee Co., Va.—9.
B. Booneville, Ky., Oct. 17, 1867. Educ. Agri. and Mech. Col., Lexington, Ky. Grad. M. D. Univ. of Louisville, 1892. Brd. June, 1904. Elec. 1904. Present 1904. Surg. C. V. D. L. & N. R. R., S. W. Va.; Specialty—Dent., Surg. & Chron. Dis.

Hurt, Alvin Judson, Chester, Chesterfield Co., Va.—3.
B. Powhatan Co., Va., Jan. 22, 1863. Educ. Homestead Acad., Chesterfield Co., Va., and Richmond Col. Grad. M. D. Chattanooga Med. Col. 1893. Third-Year Course Univ. Col. of Med., Richmond. Brd. spring 1895. Elec. 1896.

Hutchinson, Frederick, Lenah, Loudoun Co., Va.—8.
Grad. M. D. Washington Univ., Balto., 1876. Elec. 1882.

Hutton, Thomas Dunn, Glade Spring, Washington Co., Va.—9.
B. Emory, Va., July 7, 1869. Educ. Emory and Henry Col. Stud. Med. Bellevue Hosp. Med. Col., N. Y. Grad. M. D. Med. Col. Va. April, 1893. Prac. Med. Prior to 1892. (See Acts of Legis. 1891, 2, pp. 254, 55.) Elec. 1897. Att. Sess. one. Phy. Outdoor Co. Poor, Glade Spring Dist.

Hyde, John C., Brownsburg, Rockbridge Co., Va.—10.
Grad. M. D. Med. Col. Va. 1861. Elec. 1883.

Iden, Benjamin Franklin, Manassas, Prince William Co., Va.—8.
B. Warren Co., Va., Oct. 24, 1844. Grad. M. D. Wash. Univ., Balto. (now Col. Phy. and Surg.), 1872. Elec. 1872. Present 1891, 3. Mem. Internat. Assn. Ry. Surg. Loc. Surg. So. Ry. Co.

Ingram, Lawrence, Manchester, Chesterfield Co., Va.—3.
B. Lunenburg Co., Va., Dec. 18, 1865. Educ. McGuire's Sch. and Bethel Mil. Acad., Va. Grad. M. D. Med. Col. Va. 1886. Brd. June, 1887. Elec. 1888. Present 1894, 1908. Asst. Surg. Eye, Ear and Throat Inf., 1887. Pres. Loc. Brd. of Hlth. Surg. City Hosp., Almshouse, Jail, Chesterfield Troop of Cav., R., F. & P. R. R. Med. Ex. several Ins. Cos. Adj. Prof. Prac. of Surg. Univ. Col. of Med., Rich.

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Innes, William James, R. F. D. 2, Brookneal, Campbell Co., Va.—6.
B. London, Eng., Aug. 21, 1864. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. Dec., 1901. Elec. 1902. Holds Cert. N. Y. Brd. Regents.

Irvin, James S., Danville, Pittsylvania Co., Va.—5.
Grad. M. D. Univ. Va. 1893. Brd. 1895. Elec. 1897.

Irvine, J. Sinkler, Evington, Campbell Co., Va.—6.
B. Bedford Co., Va. Educ. New London Acad., Bedford Co., Va., and Va. A. and M. Col., Blacksburg, Va. Stud. Med. Univ. Va. 1889-'90. Grad. M. D. Univ. Louisville, Ky., 1891. Brd. April, 1891. Elec. 1893. Present 1893, 4, 1908. Jr. Res. Phy. Ret. for Sick, Richmond. Int. U. S. M. Hosp., Staten Island, N. Y. Jr., then Sen. H. Phy. and Ambulance Surg. Jersey City Char. Hosp.

Irving, Paulus A., Richmond, Henrico Co., Va.—3.
B. Cumberland Co., Va., 1857. Grad. M. D. Med. Col. Va. 1879. Elec. 1879. Att. Sess. several. Count.-at-large, 1908. Mem. Richmond Acad. Med. and Surg. Secy. and Treas. Med. Ex. Brd. Va. till removed from Farmville, 1892. Re-elec. Mem. Ex. Brd. Va. Jan., 1893. Resigned Oct., 1893. Prof. Dis. of Children, Univ. Col. of Med., Richmond. Secty. St. Brd. Hlth. 1893, 1908.

Isley, William Patterson, Hampton, Elizabeth City Co., Va.—1.
B. Burlington, N. C., April 30, 1872. A. B. Burlington Acad. Grad. Trin. Col., Durham, N. C. Grad. M. D. Vanderbilt Univ. 1899. Brd. N. C. May, 1899, of Va. June, 1899. Elec. 1905. Mem. Med. Soc. of Eliz. City Co., of Sea. Med. Soc. Papers, Intestinal Parasites, Dec., 1905.

Jacob, Thomas N., Dalby's, Northampton Co., Va.—1.
B. Northampton Co., Va., June, 1870. Grad. M. D. Med. Col. Va. 1899. Brd. 1899. Elec. 1902. Present 1902. Res. Phy. Shelt. Arms Hosp., 1899-1900. Mem. Al. Soc. Med. Col. Va.; Med. Exam. Mut. and N. Y. L. Ins. Cos.

James, Lorrimer, Hayes Store, Gloucester Co., Va.—1.
B. Richmond, Va., 1873. B. A.; Grad. M. D. Col. Va. 1895. Brd. May, 1895. Elec. 1906. Mem. Al. Assn. Med. Col. Va.

James, R. Bruce, Danville, Pittsylvania Co., Va.—5.
Grad. M. D. Univ. Va. 1886. Elec. 1886.

Jarratt, Robert Braxton, Jarratt, Sussex Co., Va.—4.
B. Jarratt, Va., Oct. 5, 1885. Educ. Randolph-Macon Acad., Bedford City, Va. Grad. M. D. Univ. Col. of Med., Richmond, 1907. Brd. June, 1907. Elec. 1907. Present 1907, 8. Mem. Southside Va. Med. Assn. Res. Phy. Hygeia Hosp., Rich., 1907, 8.

Jarratt, Thomas F., Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1904.

Jarrett, James T., Portsmouth, Norfolk Co., Va.—2.
Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1900.

Jeffress, William Arthur, Fairfield, Rockbridge Co., Va.—10.
B. Mecklenburg Co., Va., Jan. 15, 1871. Educ. H. Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1906. Present 1906, 8.

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Jeffrey, Aaron, Newport News, Warwick Co., Va.—1.
B. Richmond, Va., Nov. 10, 1862. Educ. McGuire's Sch., Richmond. Grad. M. D. Med. Col. Va. 1884. Elec. 1887. Mem. (and Ex-Pres.) Newport News Med. Soc.; of Sea. Med. Soc. (and Ex-Treas.) of Rich. Acad. of Med. and Surg.; Med. Ex. N. Y., Mut., Wash. and Met. L. Ins. Cos.

Jenkins, Harry Equilla, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., 1880. Educ. M. A. St. Mary's Col., N. C. Grad. M. D. Univ. Md. 1905. Brd. by Rec. from Md. 1907. Elec. 1908. Mem. Norfolk Med. Soc.

Jennings, George B., Ruckersville, Greene Co., Va.—7.
B. Rockingham Co., Va., June 1, 1838. Educ. S. River Acad., Univ. Va. Grad. M. D. Med. Col. Va. 1860. Elec. 1874. V.-Pres. 1879. Rep. on Adv. in Dis. of Children, 1879.

Jett, Elliott Thompson, Falmouth, Stafford Co., Va.—8.
Grad. M. D. Univ. Va. June, 1889, and Univ. N. Y. 1890. Brd. Sept., 1890. Elec. 1893.

Jewett, M. W., Ivanhoe, Wythe Co., Va.—9.
Grad. M. D. Balt. Med. Col. April, 1883. Elec. 1895.

Johnson, David Robert, Tazewell, Tazewell Co., Va.—9.
B. Wash. Co., Va., March 18, 1857. Educ. Hamilton Inst., Wash. Co., Va. Att. Lect. Col. Phy. and Surg., Balto., 1878, 9; Louisville Med. Col., Ky., 1890, 1; Chattanooga Med. Col.. 1903, 4. Prac. Med. prior to Brd. Elec. 1906. Mem. Tazewell Co. Med. Soc.

Johnson, Eddie Lewis, Peaksville, Bedford Co,, Va.—6.
B. Mons, Va., Feb. 19, 1889. Educ. Bedford H. Schl. Grad. M. D. Med. Col Va. 1907. Brd. June, 1907. Elec. 1908.

Johnson, Joseph Taber, Washington, D. C. Non-Res. Hon. Mem.
B. Lowell, Mass., June 30, 1845. A. M., M. D., Ph. D. Grad. M. D. Med. Dept. Georgetown Univ. 1865. Bellevue Hosp. Med. Col. 1867. In Obs. Operations, Vienna, Austria, 1871. Elec. Hon. Mem. 1893. Att. Sess. several. Mem. Med. Soc., Med. Assn., and Obs. and Gyn. Soc.—all of D. C.; Am. Med. Assn., Am. Gyn. Soc., So. Surg. and Gyn. Soc., British Gyn. Soc., Internat. Med. Cong., Pan-Am. Med. Cong.

Johnson, Thomas H., East Radford, Montgomery Co., Va.—6.
B. Riner, Va., March 4, 1879. Educ. Radford High and St. Albans Schls. Grad. M. D. Univ. Col. of Med., Richmond, 1903. Brd. June, 1903. Elec. 1905. Present 1905. Mem. S. W. Va. Med. Assn.

Johnston, Geo. Ben, Richmond, Henrico Co., Va. Res. Hon. Mem.—3.
B. Tazewell, Va. Grad. M. D. Univ., City N. Y., 1876. Elec. 1876. Pres. 1896, 7. Hon. Mem. 1897. Mem. Rich. Acad. of Med. and Surg.; Am. Med. Assn.; Amer. Assn. Obs. and Gyn.; (and Pres. 1896); So. Surg. and Gyn. Assn. (and Pres. 1904); Amer. Surg. Assn.; Internat. Surg. Assn.; Prof. Abd. Surg. Med. Col. Va.; Surg. to Mem. Hospt.; Surg. City Hosp.

Johnston, Prentiss Dupuy, Pocahontas, Tazewell Co., Va.—9.
B. Goochland C. H., Va., March 27, 1878. Educ. Chester Spgs., H. Sch. and Hampden-Sidney Col. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1906.

Jones, Arlington Cecil, Covington, Alleghany Co., Va.—10.
B. Doe Hill, Va., 1871. Educ. Va. Pol. Inst. and Univ. of Va. Grad. M. D. Univ. of Va. June, 1894. Brd. June, 1899. Elec. 1899. Present 1899. Dem. Anat. Univ. of Va. four years.

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Jones, Clarence C., Staunton, Augusta Co., Va.—10.
B. Doe Hill, Va., April 9, 1875. Educ. H. Sch. and Wash. and Lee Univ. Grad. M. D. Balto., Med. Col. 1903. Brd. June, 1904. Elec. 1904. Mem. Augusta Co. Med. Soc.

Jones, Clarence Porter, Newport News, Warwick Co., Va.—1.
B. Lunenburg Co., Va., April 7, 1874. Educ. H. Sch. Grad. M. D. Univ. Univ. Col. of Med., Richmond, 1895. Brd. May, 1895. Elec. 1896. Councilor 1908. Mason. Post-Grad. Univ. Col. of Med., Richmond, 1900, 1; at Columbia Univ., N. Y.; N. Y. Poly. and N. Y. Oph. and Aural Inst.; Consult. Ocul. and Aurist Nat. Sol. Home and Hamp. Nor. Ag. Inst.; Clinics, London and Edinburgh, 1903.

Jones, C. W., Red House, Charlotte Co., Va.—6.
Grad. M. D. Col. Phy. and Surg., Balt., 1894. Brd. 1896. Elec. 1898.

Jones, Glenn Irving, "The Newberne," Washington, D. C.
B. Luray, Va., Nov. 24, 1883. Educ. H. Sch. Grad. M. D. Geo. Wash. Univ. 1905. Brd. Dec., 1905. Elec. 1907. Mem. Med. Soc. D. C., Med. Assn. D. C., Geo. Wash. Med. Soc. Asst. Dem. Anat. Geo. Wash. Univ. Papers, Case of Pneumococcic Peritonitis, 1907; Acute Glandular Fever, 1907, Geo. Wash. Med. Soc.; Gonorrheal Epididymitis.

Jones, Herman E., Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Univ. of Va. 1886. Elec. 1888. Present 1898, 1908.

Jones, H. H., Doe Hill, Highland Co., Va.—10.
B. Highland Co., Va. Educ. Wash. and Lee Univ. Grad. M. D. Univ. of Md. 1867. Elec. 1884.

Jones, James Henry, Rux, Brunswick Co., Va. Res. Hon. Mem.—4.
B. Brunswick Co., Va., 1838. Educ. R. O. Acad. and Univ. of Va. Grad. M. D. Med. Col. of Va. 1859. Elec. 1871. Hon. Mem. 1906. Att. Sess. several. Mem. Brunswick Co. Educ. Brd. Act. Asst. Surg. C. S. A.; Med. Ex. N. Y., N. Y. Mut., N. Y. Equit. and N. W. L. Ins. Cos.

Jones, James T., Ashburn, Loudoun Co., Va.—8.
B. Va. 1861. Grad. M. D. Columbian Univ., D. C., 1893. Brd. 1896. Elec. 1904. Present 1895, 6. Mem. Fairfax Co. Med. Soc. Papers, several for Fairfax Co. Med. Soc.

Jones, J. Bolling, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Ohio Med. Col. 1893. Brd. 1894. Elec. 1894.

Jones, J. Frasia, Richmond, Henrico Co., Va.—3.
B. Mecklenburg Co., Va., 1877. Educ. So. Side Acad., Chase City, Va. Grad. M. D. Med. Col. Va. 1906. Brd. 1906. Elec. 1908. Present 1908. Mem. Rich. Acad. Med. and Surg., Church Hill Med. Soc., Dem. Anat. Med. Col. Va. Papers, Pneumonia, 1907.

Jones, John Walker Carter, Newport News, Warwick Co., Va.—1.
B. Gloucester, Va., June 28, 1878. Educ. Rich. Col. Grad. M. D. Univ. South 1900. Brd. Dec., 1901. Elec. 1902. Present 1902, 8. Clin. N. Y. Eye and Ear Inf., and in Berlin, Vienna, and London, 1906, 7. Prac. lim. to Eye, Ear, Nose and Throat.

Jones, Marshall Price, Churchville, Augusta Co., Va.—10.
B. Highland Co., Va., May 4, 1864. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1892. Brd. April, 1892. Elec. 1906. Present 1906. Mem. Augusta Co. Med. Soc. Papers, Management of Acute Appendicitis in Country Practice, Augusta Co. Med. Soc., 1906.

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Jones, Robert Rivers, R. F. D., Lawrenceville, Brunswick Co., Va.—4.
Grad. M. D. Med. Col. Va. 1891. Brd. 1894. Elec. 1904.

Jones, Thomas David, Manchester, Chesterfield Co., Va.—3.
B. Zion, Va., July 19, 1878. Educ. Pub. Schls. of Louisa. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1908. Present 1908. Mem. Chesterfield Co. Med. Soc.; Dem. Obs. Med. Col. Va. Papers, Symptoms and Diag. of Post-Partum Hemorrhage, 1907.

Jones, T. Marshall, Alexandria, Alexandria Co., Va.—8.
Grad. M. D. Med. Dept. Univ. Md. 1870. Elec. 1887. Present 1887, 9.

Jones, T. O., Harrisonburg, Rockingham Co., Va.—7.
Grad. M. D. Univ. Va. 1875. Elec. 1884. Ex-Mem. Med. Ex. Brd. Va.

Jones, William Francis, Gloucester C. H., Va.—1.
B. Petersburg, Va., Aug. 9, 1844. Educ. Petersburg Class. Inst. and Brookland Sch., Albemarle Co. Grad. M. D. Univ. Pa. 1874. Elec. 1895. Present 1898. Mem. 5th Va. Cav.

Jones, Wm. J., Crozet, Albemarle Co., Va.—7.
Med. Educ. Univ. Va. 1865, 6. Elec. 1871. Present 1872.

Jones, William Percy, Urbanna, Middlesex Co., Va.—1.
B. Urbanna, Va., Sept. 19, 1876. Educ. Loc. Sch. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1898. Elec. 1903. Present 1903, 8.

Jones, William Russell, Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. Va. June 29, 1892. Grad. Ph. G. Univ. Col. of Med., Richmond, 1894. Brd. Sept., 1892. Elec. 1894. Present 1894, 6, 9, 1908. Prof. Med., Dent., and Phar. Chem. Univ. Col. Med., Richmond. Mem. Rich. Acad. of Med. and Surg. Vis. Phy. Va. Hosp. Res. Phy. Rockbridge Alum Springs, Va.

Jordan, Saunders Robert, Minerun, Orange Co., Va.—8.
B. South Boston, Va., May 6, 1873. Grad. M. D. Med. Col. of Va. 1899. Brd. June, 1899. Elec. 1899. Present 1899. Int. Old Dominion Hosp. Richmond, Va.

Kabler, Nicholas L., Bedford Springs, Campbell Co., Va.—6.
Grad. M. D. Univ. Louisville, 1887, and Hosp. Col. of Med. Brd. 1887. Elec. 1902.

Kagey, Thomas J., Newport News, Warwick Co., Va.—1.
B. Quicksburg, Shenandoah Co., Va., June 29, 1880. Educ. High Sch. Grad. M. D. Jeff. Med. Col., Pa., 1904. Brd. June, 1904. Elec. 1906. Mem. Pen. Soc. for Med. Improv.

Kaufman, John Brooks, Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., Feb. 21, 1879. Educ. Portsmouth H. Sch., A. B. Richmond Col. Grad. M. D. Univ. of Pa. 1903. Brd. June, 1905. Elec. 1905. Mem. Norfolk Med. Soc.

Keck, Jacob Andrew, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1895. Brd. 1895. Elec. 1899.

Keel, Charles Whitington, Orebank, Buckingham Co., Va.—10.
B. Grantsboro, N. C., Sept. 7, 1871. Educ. Pub. Schs., Oak Grove Acad., Grantsboro Male and Female Inst. and Univ. of N. C. Grad. M. D. Med. Col. of Va. 1897. Brd. June, 1897. Elec. 1899. Mem. Am. Med. Assn.; of Al. Soc., Med. Col. Va.

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Keen, T. F., Hamilton, Loudoun Co., Va.—8.
Grad. M. D. Univ. Md. 1880. Elec. 1887.

Keister, Bittle C., Roanoke, Roanoke Co., Va.—6.
B. Newport, Va., Jan. 29, 1857. A. M. Roanoke Col. Va. Grad. M. D. Col. Phys. & Surg., Balto., 1882. Post-Grad. N. Y. Poly. 1884. Chicago Poly. 1894. Univ. Berlin 1900. Elec. 1885. Present 1885, 1890, 1, 4, 5, 7, 8, 9, 1901, 3, 5, 6. Mem. Am. Med. Assn. Act. Lead. Gen. Dis. 1895; Bus. Com. 1899-1900; U. S. Del. to Cong. of Prof. Med., Paris, 1900. Del. 1905 to 32d An. Con. of Char. and Cor.

Kellam, Claude Dolby, Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1904.

Kellam, John Willis, Wachapreague, Accomac Co., Va.—1.
B. Accomac Co., Va., April 12, 1856. Educ. Randolph-Macon Col. Grad. M. D. Univ. of N. Y. 1877. Elec. 1905. Present 1905. Mem. Accomac Co. Med. Soc.; of Brd. Hlth. Acco. Co.

Kellam, Sydney Sheppard, Belle Haven, Accomac Co., Va.—1.
B. Accomac Co., Va., March 11, 1874. Grad. Latin, French and Math. Univ. of Va. Grad. M. D. Univ. of Va. 1898. Brd. Sept. 1898. Elec. 1903. Post-Grad. Johns Hop. Univ. 1899. Res. Phy. St. Jos. Hosp., Balto., 1898-1900.

Kellam, William Finney, Wachapreague, Accomac Co., Va.—1.
B. Locustville, Va., Nov. 13, 1880. A. B. Randolph-Macon Col. Grad. M. D. Johns Hop. Univ. 1906. Brd. June, 1906. Elec. 1906.

Keller, Luther Hern, Hagerstown, Washington Co., Md.
B. Shenandoah Co., Va., July 4, 1852. Educ. Priv. Sch. and Roanoke Col., Va. Grad. M. D. Col. Phys. and Surg., Balto., 1874. Elec. 1876. Present 1884, 5, 6, 7, 9, 1890, 6, 7. Mem. Am. Med. Assn. Rep. on Adv. Mat. Med. and Therap., 1890. Used Pneumatic Cabinet successfully, 1887-8.

Kelly, James W., Big Stone Gap, Wise Co., Va.—9.
B. Tazewell, Va., July 21, 1861. Educ. Mt. View High Sch. and Col. Grad. M. D. Univ. of Md. 1887. Prac. med. prior to 1885. Elec. 1896. Phys. and Surg. Big Stone Gap Iron Co. and to S. A. & O. R. R.

Kelly, Robert Patton, Embreeville, Washington Co., Tenn.
B. Pearisburg, Giles Co., Va., May 20, 1879. Educ. Emory and Henry Col. Grad. M. D. Univ. Col. of Med., Richmond, 1907. Brd. June, 1907. Elec. 1907. Surg. V. & S. W. Ry. Co. Mem. Co. (Scott) Brd. of Hlth, Wise Co., S. W. Va. Med. Socs., and Am. Med. Assn.

Kemper, A. S., Port Republic, Rockingham Co., Va.—7.
Grad. M. D. Univ. Col. of Med., Richmond, April, 1895. Brd. May, 1895. Elec. 1896.

Kendig, Edwin Lawrence, Victoria, Lunenburg Co., Va.—4.
B. Spotsylvania Co., Va., Oct. 11, 1881. Grad. Bel-Air Sch. 1899. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905. Present 1905, 6. Mem. Am. Med. Assn.; Co. Brd. Hlth.; Res. Phy. (and Lec. Phy. and Anat. to Nurses) Retreat for Sick, Richmond, 1905, 6; Surg. Va. Ry. Co..

Kendig, Walter Dennis, Kenbridge, Lunenburg Co., Va.—4.
B. Spotsylvania Co., Va., May 29, 1880. Grad. Bel-Air Sch. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905. Mem. Lunenburg Co. Brd. Hlth. Phy. to Lunenburg Co. Almshouse.

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Kennicott, Philip A., Palmyra, Fluvanna Co., Va.—10.
B. W. Northfield, Ill., May 3, 1864. Grad. M. D. Col. Phy. and Surg., Chicago, 1889. Brd. 1902. Elec. 1904. Present 1904, 8.

Kennon, Beverly Randolph, Norfolk, Norfolk Co., Va.—2.
B. Powhatan Co., Va., Oct. 15, 1871. Educ. Va. Poly. Inst. Grad. M. D. Univ. of Va. 1893. Brd. June, 1900. Elec. 1901. Present 1901. Mem. Norfolk Med. Soc.; Sea. Med. Assn.; Am. Med. Assn.; Ophth., Otol., and Laryng. St. Vincent's Hosp.

Kent, James Ligon, Lynchburg, Campbell Co., Va.—6.
B. Pulaski Co., Va., Aug. 27, 1867. Educ. Priv. tutors and Hampden-Sidney Col. Att. Univ. of Va. 1887-9. Grad. M. D. Bell. Hosp. Med. Col. 1890. Brd. 1890. Elec. 1891. Present 1891-2-4-5, 1900-1-3-4-5-6-8. Mem. Am. Med. Assn.; Lynch. Acad. Med.; Am. Lary. Rhin. and Otol. Soc.; Am. Pub. Hlth. League, S. Pied. Med. Soc. Att. Lect. N. Y. Poly. and Clin. Manhattan Eye and Ear Hosp., 1897, 1903.

Kent, Samuel Thomas Anderson, Ingram, Halifax Co., Va.—6.
B. Meadsville, Va., March 16, 1859. Educ. Va. Agric. and Mech. Col., Blacksburg, Va. Grad. M. D. Col. Phys. and Surg., Balto., 1882. Elec. 1883. Present 1887, 1890-8-9, 1901-2-3-4-5-6-7-8. Ex-Pen. Ex. Halifax Co.; 2d V.-Pres. 1900-4. Mem. Loc. Brd. Hlth. Ex. Equit., N. Y. Mut., N. Y., and N. W. Union, Mut. Ben. and other Ins. Cos. Post-Grad. N. Y. Post-Grad. Col. and Hosp. 1885.

Kern, Robert L., Richmond, Henrico Co., Va.—8.
B. White Post, Clarke Co., Va., Sept. 23, 1871. Educ. Richmond Pub. Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Present 1899, 1908. Mem. Rich. Acad. Med. and Surg.

Kerns, William W., Bloxom, Accomac Co., Va.—1.
B. Gloucester C. H. Va., Feb. 9, 1871. Educ. Va. Agri. and Mech. Col., Blacksburg, Va. Civ. Eng. Grad. M. D. Univ. Col. of Med., Richmond, 1896. Brd. Sept., 1896. Elec. 1897. Mason. Mem. E. Shore Med. Assn. Med. Ex. N. Y. Mut. and Equit. L. Ins. Cos. Asst. Surg. N. Y., P. and W. Ry.

Kerr, Adolphus Franklin, Greenville, Augusta Co., Va.—10.
B. Pocahontas Co., W. Va., Oct. 12, 1848. Educ. Green Bank Acad., W. Va., Montgomery Acad. and Select Sch. for Young Men. Grad. M. D. Mo. Med. Col. 1877. Elec. 1888. Present 1890, 2, 4, Mem. Augusta Co. Med. Soc. Papers for Soc., External Glanders or Farcy in Man, 1889.

Kerr, George, Hampton, Elizabeth City Co., Va.—1.
B. McConnellsburg, Fulton Co., Pa., Jan. 9, 1841. Educ. Pub. Sch., New London Acad., Millersville St. Nor., Pa. Nat. St. Col., N. Y. Grad. M. D. Univ. Pa. 1864 and Ph. D. 1872. Brd. Dec. 1907. Elec. 1908. Mem. Am. Med. Assn. Papers, Use of Alcohol Medicinally and Socially, 1873.

Kight, Rufus S., Norfolk, Norfolk Co., Va.—2.
B. Camden Co., N. C., 1876. Grad. M. D. Univ. of Md. 1900. Brd. June, 1900. Elec. 1902. Present 1902. Mem. Sea. Med. Assn.; of Norfolk Med. Soc.; Res. Phy. Univ. Md., Free Lying-in-Hosp., 1900-1. Clin. Asst. St. Vincent Hosp., 1901-3.

Killian, Jacob Pinckney, Salem, Roanoke Co., Va.—6.
B. Augusta Co., Va., Feb. 23, 1849. Educ. Roanoke Col. Grad. M. D. Univ. City N. Y., 1870. Elec. 1890. Present 1892, 4. Pres. Salem Brd. Hlth.

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King, David James, Williamsburg, James City Co., Va.—3.
Grad. M. D. Buffalo Univ., 1900. Brd. June, 1902. Elec. 1904.

King, John C., Marion, Smyth Co., Va.—9.
Grad. M. D. Col. Phy. and Surg., Balto., 1893. Brd. April, 1893. Elec. 1903. Supt. S. W. St. Hosp. 1908-9.

King, Marion Norwood, Texarkana, Miller Co., Ark.
B. Warrenton, N. C., Oct. 15, 1874. Educ. Warrenton Male Acad. Grad. M. D. Univ. of Md. 1898. Brd. June, 1899. Elec. 1900. Was Chief of Clin. to Prof. of Surg. Univ. of Md., and Asst. Surg. Univ. of Md. Hosp.

Kinsolving, David Laton (R. F. D.), Abingdon, Washington Co., Va.—9.
B. Washington Co., Va., July 12, 1866. Grad. M. D. Univ. Col. of Med., Richmond, 1896. Brd. Sept., 1896. Elec. 1897.

Kinne, Edward, Elkhorn, Walworth Co., Wis.
B. Walworth Co., Wis., 1856. Educ. Wis. St. Nor. Sch. Grad. M. D. Univ. of Va. 1896. Brd. Sept., 1896. Elec. 1897. Present 1904.

Kipps, D. M., Front Royal, Warren Co., Va.—7.
B. Shenandoah Co., Va., 1865. Educ. Poly. Inst., Newmarket, Va. Grad. M. D. Col. Phys. and Surg., Balto., 1888. Brd. 1892. Elec. 1892.

Kirk, Thomas Allen, Roanoke, Roanoke Co., Va.—6.
B. Penn., 1877. Educ. Roanoke H. Sch., Alleghany Inst., Hampden-Sidney Col., B. A. Grad. M. D. Univ. of Va. 1901. Brd. Dec., 1901. Elec. 1904. Present 1901, 3, 4. Mem. Roa. Acad. of Med.; Dis. Phy. and Gyn. Johns Hopkins Hosp., 1901- 2. Res. Phy. Christ Hosp., Jersey City, N. J., 1902, 3.

Klipstein, G. T., Alexandria, Alexandria Co., Va.—8.
Grad. M. D. Jeff. Med. Col., Phila., 1880. Elec. 1874.

Knight, John Elwood, Bristersburg, Fauquier Co., Va.—8.
B. Fredericksburg, Va., Dec. 11, 1883. A. B. Fredericksburg Col. Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908.

Knight, Will James, Newport News, Warwick Co., Va.—1.
Grad. M. D. Med. Col. of Va. April, 1897. Brd. June, 1897. Elec. 1898.

Koontz, Andrew Jacob, Independence, Grayson Co., Va.—5.
B. Lexington, Davidson Co., N. C., May 5, 1867. Educ. Trap Hill Inst., Univ. N. C. Grad. M. D. Col. Phys. and Surg., Balto., 1887. Post-Grad. Univ. City N. Y. 1890-1. Brd. Sept., 1892. Elec. 1892. Present 1892. Mem. Grayson Co. Med. Soc. Ex. Fid. Mut. and N. Y. L. Ins. Cos.

Koontz, John William, Mt. Jackson, Shenandoah Co., Va.—7.
B. Shenandoah Co., Va., Feb. 4, 1857. Educ. Shenandoah Valley Acad., Winchester. Grad. M. D. Jeff. Med. Col. 1880. Elec. 1889.

Kunkel, Cooper Dave, Pulaski, Pulaski Co., Va.—9.
B. Rockbridge Co., Va., 1849. Educ. Oak Hill Sch. Grad. M. D. Bellevue Hosp Med. Col., N. Y., 1873. Elec. 1903. Mem. S. W. Va. Med. Soc.; Asst. Phy. Quar. Post., St. Louis, Mo. Asst. Phy. St. Louis Co. Ins. Asy. Res. Phy. St. Louis Co. Poorhouse.

Kuyk, Dirk Adrian, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1884. Elec. 1887. Present 1898, 1908.

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Labenburg, Charles A., Richmond, Henrico Co., Va.—3.
B. Richmond, Va., May 24, 1876. Educ. Pub. Sch. Grad. M. D. Univ. Col. of Med., Richmond, 1896. Brd. May, 1895. Elec. 1898. Mem. Richmond Acad. Med. and Surg., Adj. Prof. and Asst. to Chair of Clin. Med. Univ. Col. of Med., Richmond. Res. Phys. City (Richmond) Hosp. 1896-7.

Lacy, Joseph Barkley, Nathalie, Halifax Co., Va.
B. Halifax Co., Va., 1872. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905. Int. Mem. Hosp., Richmond, 1905-6.

Laird, John Harvey, Lexington, Rockbridge Co., Va.—10.
B. Black Walnut, Halifax Co., Va., Nov. 1, 1872. Educ. Wash. and Lee Univ. Grad. M. D. Univ. of Va. 1896. Brd. Sept., 1897. Elec. 1904. Present 1904. Surg. C. & O. Ry.

Lake, Norman Powell, Rectortown, Fauquier Co., Va.—8.
B. Upperville, Va. Educ. Priv. Sch. and Geo. Wash. Univ. Grad M. D. Univ. Va. 1908. Brd. June, 1908. Elec. 1908. Mem. Alpha Kappa Kappa Med. Frat.

Lancaster, Albert Chapman, Fayerdale, Patrick Co., Va.—5.
B. Floyd Co., Va., 1875. Educ. Wm. and Mary Col. Grad. M. D. Univ. of South, 1901. Brd. Dec., 1901. Elec. 1903. Mem. Patrick Co. Med. Soc.

Land, Emerson, Virginia Beach, Princess Anne Co., Va.—2.
B. Princess Anne Co., Va., Nov. 8, 1860. Grad. of Va. Agric. and Mech. Col., Blacksburg, Va. Grad. M. D. Univ. of Md. 1886. Brd. spring 1886. Elec. 1898. Present 1898. Mem. Sea. Med. Soc. Phys. Co. (Prin. Anne) Almshouse.

Lane, Thomas B., Port Haywood, Mathews Co., Va.—1.
Grad. M. D. Med. Col. Va. 1860. Elec. 1894.

Lankford, Burnley, Norfolk, Norfolk Co., Va.—2.
B. Southampton Co., Va., 1880. Educ. Norfolk H. Sch. and Richmond Col. Grad. M. D. Univ. of Va. 1903. Brd. June, 1903. Elec. 1904. Present 1904. Mem. Norfolk Med. Soc.; of Am. Med. Assn.

Lankford, Livius, Norfolk, Norfolk Co., Va.—2.
B. Suffolk, Va., 1856. Educ. Richmond Col. Grad. M. D. Univ. City N. Y., 1877. Elec. 1882. Present 1882-3-4-5-7-8-9, 1891-4-8-9, 1900-1-2-5. Exec. Com. 1887-8. Chrm. Necrolog. Com. 1900-1908. 1st V.-Pres. 1902. Mem. Med. Ex. Brd. Va. 1885-7—Resigned. British Gyn. Soc.; Ninth Internat. Med. Cong.; Norfolk Med. Soc.

LaRoque, George Paul, Richmond, Henrico Co., Va.—3.
B. Kinston, N. C., June 16, 1876. Educ. Univ. of N. C. Grad. M. D. Univ. of Pa. 1902. Brd. Dec., 1905. Elec. 1905. Present 1905-8. Mem. Am. Med. Assn.; Rich. Acad. Med. and Surg.; Tri-St. Med. Assn.; Lect. and Bedside Inst. in Surg. and Gen. Urin. Dis.; Univ. Col of Med., Richmond, 1905-9. For. Inst. in Surg. Univ. of Pa. and Woman's Med. Col. of Pa.

Latane, Robert H., Buchanan, Botetourt Co., Va.—9.
Grad. M. D. Med. Col Va. 1883. Elec. 1883.

Latane, Samuel Peachy, Winchester, Frederick Co., Va.—7.
B. Va. 1873. Educ. Balto. City Col. and Johns Hopkins Univ. Grad. M. D. Univ. of Md. 1897. Brd. Dec., 1900. Elec. 1903. Mem. Med. and Chir. Fac. of Md.; For. Sr. Res. Phy. Lying-in Hop., Univ. of Md.; Res. Phy. Hosp. for Women, Md.; Post-Grad. Johns Hop. Univ. and Univ. Heidelberg, Ger.; Mem. Med. Staff Winchester Mem. Hosp., and St. Brd. Hlth.

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Latane, Thomas Bernard, Stevensville, King and Queen Co., Va.—1.
Grad. M. D. Univ. of South, Sewanee, Tenn., 1903. Brd. 1903. Elec. 1904.

Lawford, Frederick, Berkley, Norfolk Co., Va.—2.
Educ. Balto. Poly Inst. Grad. M. D. Univ. of Md. 1900. Brd. Dec., 1901. Elec. 1903. Mem. Tri-State Med. Soc. Papers, Gunshot Wounds of the Stomach, 1903.

Lawrence, Edgar L., Floyd, Floyd Co., Va.—5.
B. Floyd Co., Va., Sept. 26, 1869. Grad. M. D. Med. Col. Va. 1900. Brd. Nov., 1899. Elec. 1900. Present 1901, 3. Mem. Al. Assn. Med. Col. Va.; of Bd. Hlth. Floyd Co.; of S. W. Va. Med. Assn. Ex. several L. Ins. Cos. Coroner Floyd Co.

Leake, Josiah, Peakes Turnout, Hanover Co., Va.—3.
B. Ashland, Va., Oct. 25, 1881. Educ. Ashland H. Sch., A. B. Randolph-Macon Col. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908.

Leake, Louis Knight, East Leake, Goochland Co., Va.—3.
Grad. M. D. Univ. Col. of Med., Richmond, 1903. Brd. June, 1904. Elec. 1904.

Lee, Charles B., Glenjean, Fayette Co., W. Va.
Grad. M. D. Louisville Med. Col. 1891. Brd. April, 1892. Elec. 1892. Resigned 1894. Re-elected 1896. Present 1898.

Lee, Robert R., Martinsville, Henry Co., Va.—5.
B. Franklin Co., Va., Feb. 17, 1869. Educ. Oak Ridge Inst., N. C. Grad. M. D. Col. P. and S., Balto., 1893. Brd. 1893. Elec. 1893. Present 1883, 1894, 5, 8, 1908.

Leigh, Alfred, Colvin Run, Fairfax Co., Va.—3.
Grad. M. D. Med. Col. of Va. 1880. Elec. 1885.

Leigh, H. Gilbert, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Bellevue Hosp. Med. Col. April, 1891. Brd. April, 1891. Elec. 1894.

Leigh, Southgate, Norfolk, Norfolk Co., Va.—2.
B. May 21, 1864. Grad. M. D. Univ. Va. 1888, and Columbia Univ., N. Y. City, 1889. House Staff Mt. Sinai Hosp., N. Y. Elec. 1888. Brd. 1893. Present 1888, 1898-9, 1900-1-2-3-4-5-6-7-8. First V.-Pres. 1899-1900. Spec. Work Gen. Hosp., Vienna, Aus., 1892; Mem. Am. Med. Assn.; So. Surg. and Gyn. Assn.; of Sea. Med. Assn.; of Tri-St. Med. Assn. and First V.-Pres. 1904 and 1906.

Leith, Richard D., Vienna, Fairfax Co., Va.—3.
B. Loudoun Co., Va., March 9, 1853. Educ. Acads. and Randolph-Macon Col. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1877. Elec. 1905. Mem. Fairfax Co. Med. Soc. Surg. to Wash.. Arlington and Falls Church Ry. Co. Med. Ex. Met. L. Ins. Co.

Lemon, Charles Warner, Claremont, Fayette Co., W. Va.
B. Longdale, Va., June 16, 1875. Educ. Richmond Col. . Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1898. Present 1896. Mem. Al. Univ. Col. of Med. Res. Phys. Retreat for Sick, Richmond, 1898-9. Lect. on Mat. Med. and Chem., Retreat Train. Sch. for Nurses, 1898-9.

Lemon, Rufus M., Callaway, Franklin Co., Va.—5.
B. Botetourt Co., Va., 1856. Educ. Fincastle Sch. Grad. M. D. Ky. Sch. Med. 1877. Elec. 1885. Present 1885, 8, 9.

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Leonard, Thomas Benjamin, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Oct. 21, 1881. Educ. Xaverian Bros. Grad. M. D. Univ. Col. of Med., Richmond, 1904. Brd. June, 1904. Elec. 1904. Present 1904, 8.

Lester, Edward S., R. F. D. 2, Witt, Pittsylvania Co., Va.—5.
Grad. M. D. Vanderbilt Univ. 1899. Brd. June, 1899. Elec. 1906.

Levy, Ernest Coleman, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Aug. 11, 1868. Educ. Richmond Col. Grad. M. D. Med. Col. Va. 1890. Brd. 1890. Elec. 1895. Present 1897-8-9, 1900-4-5-6-7-8. 2d V.-Pres. 1898. Mem. Rich. Acad. Med. and Surg. Am. Med. Assn.; of Am. Pub. Hlth. Assn.; of Am. Soc. Adv. Sci.; of Am. Water Works Assn.; Engaged exclusively in sanitary work, 1900-9. City Bact. and Dir. Lab. City Water Dept. Chief Hlth. Off. Richmond Hlth Dept.

Levy, Henry Hyman, Richmond, Henrico Co,, Va.—3.
B. Richmond, Va., Dec. 27, 1850. B. A. Richmond Col. Grad. M. D. Med. Col. Va., 1871. Elec. 1873. Present 1875, 8, 9, 1887, 1894, 8, 9, 1907, 8. Ex-Pres. Rich. Acad. Med. Prof. Phy. and Path. Med. Col. Va.

Lewis, Charles Howard, Richmond, Henrico Co., Va.—3.
B. Balto., Md., March 1877. Educ. Pub. Schls. and Balto. Col. Grad. M. D. Univ. Md. 1900. Brd. June, 1906. Elec. 1908. Present 1908.

Lewis, Clarence T., Staunton, Augusta Co., Va.—10.
B. Washington, D. C., 1852. Grad. M. D. Geo. Wash. Univ., D. C., 1878. Elec. 1885. Resigned 1890. Re-elected 1905. Mem. Augusta Co., Med. Soc.; Pres. U. S. Pen. Ex. Brd.; City Phy.; Mem. Brd. of Hlth. Papers, Treatment of Typhoid Fever, Summer Diarrhoea of Children.

Lewis, Duff Green, 1311 Fourteenth Street, N. W., Washington, D. C.
B. Jefferson Co., W. Va., Oct. 25, 1869. B. A. of Wash. and Lee Univ. June, 1889. Grad. M. D. Univ. of Va. 1891. Brd. April, 1892. Elec. 1894. Mem. Med. Assn. of D. C. Res. Phys. St Luke's Home, Rich., Va., 1891-2. Dem. Surg., Georgetown Univ.

Lewis, Edmund Henry, Culpeper, Culpeper Co., Va.—8.
B. Culpeper Co., Va., June 21, 1861. Grad. Va. Mil. Inst. Grad. M. D. Jeff. Med. Col. 1887. Brd. May, 1897. Elec. Oct., 1887. Present 1890. Papers, Treatment Gunshot Wound of Hip-Joint, 1889; Valentine's Meat-Juice and Glycerine, Nutriment when Externally Applied, 1891; Treatment of Influenza, 1892.

Lewis, Frank Waring, Whealton, Lancaster Co., Va.—1.
B. Litwalton, Va., May 28, 1857. Educ. Va. Mil. Inst. Grad. M. D. Univ. Md., 1878. Elec. 1904. Present 1904. Mem. Brd. Vis. Med. Col. Va. Supt. Pub. Schls., Lancaster Co., 1886-1905.

Lewis, Herbert Wallis, R. F. D. 7, Richmond, Henrico Co., Va.—3.
B. Culpeper Co., Va., June 8, 1877. Educ. E. View Acad., Culpeper, Va. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1904. Present 1904-8. Mem. Al. Assn. Univ. Col. Med. Int. Shelt. Arms Hosp., Richmond, 1903-4.

Lewis, John Marye, Manassas, Prince William Co., Va.—8.
B. Manassas, Va., June 3, 1881. Educ. Wm. and Mary Col. Grad. M. D. Univ. Va. 1905. Brd. June, 1905. Elec. 1908.

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Lewis, J. Newton, Roanoke, Roanoke Co., Va.—6.
B. Jefferson Co., W. Va., 1867. Educ. Wash. and Lee Univ., Va. Grad. M. D. Col. P. and S., Balto., 1892. Brd., spring, 1892. Elec. 1896. Coroner Roanoke.

Lewis, W. Herbert, Lawrenceville, Brunswick Co., Va.—4.
Grad. M. D. Univ. of Md. 1896. Brd. June, 1896. Elec. 1906.

Lile, Samuel, Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Univ. Louisville 1888. Brd. 1892. Elec. 1894.

Lillard, Edward Newton, Tanner's Creek, Norfolk Co., Va.—2.
B. Marksville, Va., Jan. 8, 1872. Educ. Locust Dale Acad. Grad. M. D. Med. Col. Va., May, 1901. Brd. June, 1901. Elec. 1901. Mem. Al. Assn., Med. Col. Va.

Lincoln, John Edward, Lacey Spring, Rockingham Co., Va.—7.
Grad. M. D. Bellevue Hosp. Med. Col., N. Y., 1877. Elec. 1904.

Linkous, Maury B., Cambria, Montgomery Co., Va.—6.
B. Montgomery Co., Va., May 2, 1874. Educ. Va. Poly. Inst. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1898. Elec. 1901. Present 1901, 8.

Lipscomb, Philip D., Richmond, Henrico Co., Va.—8.
B. Albemarle Co., Va., Feb. 7, 1870. B. A. of Wm. and Mary Col., Williamsburg, Va. Grad. M. D. Univ. Va. June, 1900. Brd. June, 1900. Elec. 1900. Present 1900-8. Asst. Path. and Med. Biol., Univ. of Va., 1900-1.

Litchfield, Jr., George Victor, Cooper's, Mercer Co., W. Va.
B. Abingdon, Va., February 15, 1877. A. M. Randolph-Macon Col. Grad. M. D. Johns Hopkins Univ. 1902. Brd. June, 1902. Elec. 1902.

Lloyd, Jr., John J., Lynchburg, Campbell Co., Va.—6.
B. Bedford City, Va., 1879. Educ. Epis. H. Schl. and Roanoke Col. Grad. M. D. Univ. Va. 1903. Brd. June, 1903. Elec. 1908. Mem. Lynch. Acad. Med., S. Pied. Med. Soc.

Lofton, Lucien, North Emporia, Greenesville Co., Va.—4.
B. Georgia 1872. A. B., Ph. G. Grad. M. D. So. Med. Col., Atlanta, Ga. (now Col. Phy. and Surg.), 1884. Brd. June, 1897. Elec. 1898. Present 1898, 1907-8. Dropped 1905; reinstated 1907. Mem. and Pres. Sea. Med. Assn. of Va. and N. C. Med. Exam. several Benev. Socs. Ex-Asst. Prof. Anat., So. Med. Col. Atlanta, Ga.

Loving, J. Garland, Manchester, Chesterfield Co., Va.—3.
Grad. M. D. Med. Col. Va. May, 1899. Brd. June, 1899. Elec. 1899.

Lucas, William Andrews, Patterson, Wythe Co., Va.—9.
Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. Nov., 1901. Elec. 1902.

Lukin, Frank H., Pamplin City, Appomattox Co., Va.—10.
Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1904.

Lush, Herbert B., Winterpock, Chesterfield Co., Va.—3.
B. Wellington Co., Ont., June 24, 1867. Grad. M. D. Med. Col. Va. 1896. Brd. 1897. Elec. 1901. Mem. Chesterfield Co. Med. Soc. Ex. Ger. L. Ins. Co. Phys. to Co. (Chesterfield) Almshouse.

Luxford, Thomas B., R. F. D. 1, Princess Anne, Princess Anne Co., Va.—2.
B. Richmond, Va., March 13, 1871. Grad. M. D. Med. Col. Va. April, 1895. Brd. May, 1895. Elec. 1897. Mem. Al. Assn. Med. Col. Va.

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Lyell, Robert Oliver, Warsaw, Richmond Co., Va.—1.
B. Richmond Co., Va., July 14, 1878. Educ. Farnham Acad. Grad. M. D. Univ. Md. 1902. Brd. June, 1902. Elec. 1904. Present 1904-8.

Lynch, James Mortimer, Cheriton, Northampton Co., Va.—1.
B. Petersburg, Va., Feb. 1, 1879. Educ. Hampden-Sidney Col. Grad. M. D. Geo. Wash. Univ., D. C., 1905. Brd. Dec., 1907. Elec. 1908. Mem. Northamp. Co. Med. Soc. Ex-Asst. Surg. Nat. Sol. Home.

Lynch, Junius Francis, Norfolk, Norfolk Co., Va.—2.
B. Montgomery Co., Ala. Grad. M. D. Med. Col. Va. 1888. Brd. of Va. 1888; of Fla. 1890. Elec. 1898. Present 1898-9, 1902-4-5-6-8. Third V.-Pres. 1902.

Mabry, Jesse Hughes, Newport News, Warwick Co., Va.—1.
B. Verona, Miss., July 30, 1879. Educ. W. Fla. Sem. and Richmond Col. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. June, 1901. Elec. 1902. Mem. Newport News Med. Soc.

MacLean, Henry Stuart, Richmond, Henrico Co., Va.—3.
B. Inverness, Scotland, Oct. 23, 1873. Educ. Priv. Schs. Grad. M. D. L. I. Col. Hosp., N. Y., 1894. Brd. June, 1896. Elec. 1897. Present 1898, 1908. Mem. Rich. Acad. Med. and Surg.; Tri-State Med. Assn.; Am. Med. Assn., S. Surg. Soc. Prof. Path., Univ. Col. of Med., Richmond. Surg. to Va. and City Hosps.

Macon, William Douglas, Charlottesville, Albemarle Co., Va.—7.
B. Albemarle Co., Va., April 17, 1869. Educ. Univ. of Va., A. B. Randolph-Macon Col. Grad. M. D. Univ. Va. 1897. Brd. 1897. Elec. 1900. Present 1900. Int. Willard Parker Hosp., N. Y. H. Surg. Christ Hosp., Jersey City, N. J.

Magruder, Edward M., Charlottesville, Albemarle Co., Va.—7.
B. Charlottesville, Va., Nov. 27, 1858. Educ. Priv. Schs. and Univ. Va. Grad. M. D. Univ. Va. 1884. Brd. Aug., 1885. Elec. 1885. Present 1885-7, 1890-2-3, 1901-8. Pres. Pied. Med. Soc., 1903-4; Inst. Phys. Diag. Univ. Va. Papers for Soc., Reports on Advances in Chemistry, 1887; Neurectomy for Facial Neuralgia, 1889; Removal of Large Vesical Calculus per Vaginal Lithotomy, 1890.

Mahood, Hugh Benjamin, North Emporia, Greenesville Co., Va.—4.
B. Petersburg, Va., July 28, 1870. Grad. M. D. Med. Col. Va. 1899. Brd. 1899. Elec. 1904. Present 1904. Mem. So. Side Va. Med. Assn. Papers, Sequelae of Malaria, 1903; Some Remarks on Treatment of Typhoid Fever, 1904.

Mallet, John William, University, Albemarle Co., Va.—7.
B. Dublin, Ireland, Oct. 10, 1832. A. B. Univ. Dublin; Ph. D. Univ. Goettingen; LL. D. Wm. and Mary Col., Va., Univ. Miss., Princeton, N. J., and Johns Hopkins Univ. Grad. M. D. Med. Dept. Univ. La. 1868. Elec. 1873. Present 1876, 1893, 8. Prof. Emer. Chem. Univ. Va.; Hon. Mem. Med. and Chir. Fac., Md.; Non-Res. Mem. Col. Phys., Phila.

Mallory, Frank Nicholson, Lawrenceville, Brunswick Co., Va.—4.
B. Smoky Ordinary, Va., Aug. 30, 1881. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1906. Mem. So. Side Va. Med. Assn.

Mallory, Herbert Clifford, Greenbackville, Accomac Co., Va.—1.
B. Hanover Co., Va., 1878. Educ. Rich. H. Sch.; Stud. Med. Univ. Col. Med., Richmond, 1899-1901. Grad. M. D. Col. Phy. and Surg., Atlanta, Ga., 1902. Brd. June, 1902. Elec. 1904. Post-Grad. Univ. Berlin 1902-3, and in Phys., Chem. and Tox., Univ. Va. 1903.

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Mann, David Meade, Richmond, Henrico Co., Va.—3.
B. Petersburg, Va., 1874. Educ. McCabe's Univ. Sch. Grad. M. D. Med. Col. Va. 1895. Brd. spring, 1895. Elec. 1895. Res. Phys. Old Dominion Hosp., Richmond, 1896. Mem. Rich. Acad. Med. and Surg. Lect. Minor and Instr. Surg., Med. Col. Va., 1899-1900.

Mann, Herbert, Richmond, Henrico Ca., Va.—3.
Grad. M. D. Med. Col. Va. 1903. Brd. June, 1904. Elec. 1904.

Mann, John, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Med. Col. Va. April, 1894. Brd. April, 1894. Elec. 1897.

Manson, Richard H., Minden, Fayette Co., W. Va.
B. Warfield, Brunswick Co., Va., Feb. 17, 1883. Educ. Hoge Acad., Blackstone, Va. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1907.

Maphis, Samuel Wellington, Warrenton, Fauquier Co., Va.—8.
B. Lantz Mill, Shenandoah Co., Va., Dec. 16, 1867. Educ. Shenandoah Nor. Col.; Phar. six years; Stud. Med. Univ. Va. 1891-2. Grad. M. D. Univ. of Md. 1893. Brd. April, 1893. Elec. 1893. Dropped 1898. Re-elect. 1904. Present 1893, 1908. Surg. Chicago Drain. Canal 1894-8. Secy. Brd. Hlth., Warrenton, Va. (Was out of Va. 1894 to 1901.)

Mapp, James Harmanson, Buena Vista, Rockbridge Co., Va.—10.
B. Northampton Co., Va., Dec. 15, 1865. Educ. Norfolk Acad. Grad. M. D. Col. Phys. and Surg., Balto., 1889. Brd. April, 1889. Elec. 1889. Present 1890-1-2-8, 1908. Chrm. Brd Hlth., Buena Vista, Va. Loc. Surg. N. & W. R. R.

Mapp, John E., Grangeville, Accomac Co., Va.—1.
B. Feb. 1, 1846, Locust Mt., Va. Educ. Locustville Acad. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1868. Elec. 1905.

Marchant, Charles Denbeigh, Harmony Village, Middlesex Co., Va.—1.
B. Middlesex Co., Va., Dec. 19, 1872. Educ. Saluda and Cleveland H. Schs. and Univ. Va. Grad. M. D. Univ. Md. 1897. Brd. Md. May, 1897, and Va. June, 1897. Elec. 1902. Med. Ex. Mass. Mut., S. Atl., Aetna, Union Cent., N. Y. Res. Fund and Mut. L. Ins. Cos.

Marks, Wirt P., Claremont, Surry Co., Va.—4.
Grad. M. D. Tulane Univ. 1891. Brd. Oct., 1891. Elec. 1906

Marrow, D. Hunter, Union Level, Mecklenburg Co., Va.—4.
B. Mecklenburg Co., Va., 1866. Educ. Richmond Col. Grad. M. D. Louisville Med. Col. 1888, and Jeff. Med. Col. 1889. Brd. April, 1894. Elec. 1895.

Marshall, Edward Lionel, R. F. D. 1, Big Island, Bedford Co., Va.—6.
B. Exeter, England, 1861. Educ. Clifton Col., England. Grad. M. D. Col. Phys. and Surg., Balto., 1891. Brd. April, 1891. Elec. 1891. Present 1891.

Marshall, Thomas Rollins, Richmond, Henrico Co., Va.—3.
B. Bedford City, Va., Aug. 18, 1871. Educ. Sunnyside H. Sch. and Va. Poly. Inst. Stud. Med. Univ. Md. Grad. M. D. Col. Phys. and Surg., Balto., 1893. Post-Grad. Johns Hops. Hosp.; N. Y. Post-Grad., and in Europe. Brd. May, 1893. Elec. 1894. Present 1896, 1905-8. Mem. Rich. Acad. Med. and Surg., of Am. Med. Assn., of Anglo-Am. Med. Soc. of Berlin; of Am. Med. Assn. of Vienna. Surg. Span.-Amer. War.

Martin, Arthur Lewis, Naulakla, Caroline Co., Va.—1.
Grad. M. D. Col. Phy. and Surg., Balto., 1891. Brd. spring, 1891. Elec. 1900.

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Martin, Berkeley Hancock, R. F. D. 2, Richmond, Henrico Co., Va.—3.
B. Chesterfield Co., Va., Sept. 12, 1878. Educ. Pub. Sch. and Bon Air Acad. Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908. Present 1908. Post-Grad. work in Sloan Mat. Hosp., N. Y.

Martin, Ernest R., Grafton, York Co., Va.—1.
B. Palmyra, Va., Nov. 15, 1877. Educ. Edgewood and Locust Dale Acads. Grad. M. D. Med. Col. Va. 1899. Brd. June, 1899. Elec. 1902. Mem. York and Warwick Co. Med. Soc. Med. Ex. Mut. of N. Y., for A. O. M. W., for Am. Guild, and for N. W. L. Ins. Cos.

Martin, Moir Saunders, Stuart, Patrick Co., Va.—5.
B. Francisco, N. C., Jan. 20, 1883. Educ. Danville Mil. Inst. and Hampden-Sidney Col. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. 1905. Elec. 1905. Present 1905-8. Mem. Pat. Henry Med. Soc. Int. St. Vincent's Hosp., Norfolk, Va.

Martin, Rawley White, Lynchburg, Campbell Co., Va. Res. Hon. Mem.—6.
B. Pittsylvania Co., Va., Sept. 30, 1835. Educ. Ridgeway Sch. and Univ. Va. Grad. M. D. Univ. City N. Y. 1858. Elec. 1873. Att. Sess. nearly all. V.-Pres. 1880. Pres. 1885. Hon. Mem. 1886. Mem. Am. Med. Assn.; of So. Surg. and Gyn. Assn., Tri-St. Med. Assn. Med. Ex. Brd. Va. (and Pres. since 1893), and Pres. Va. St. Brd. of Hlth. since reorgan. 1893.

Martin, Jr., Rawley W., Chatham, Pittsylvania Co., Va.—5.
Grad. M. D. Univ. Va. 1894. Brd. 1894. Elec. 1894. Present 1896-7-8.

Martin, Richard Saunders, Stuart, Patrick Co., Va. Res. Hon. Mem.—5.
B. Stokes Co., N. C., Nov. 15, 1859. Educ. Priv. Sch. Grad. M. D. Col. Phys. and Surg., Balto., 1881. Elec. 1887. Att. Sess. twelve. Orator 1894. Pres. 1901. Hon. Mem. 1902. Elec. Mem. Med Exam. Brd. Va. 1892 and Secy. since. Surg. Mother's Home, Stuart, Va.; Res. Phy. Md. Woman's Hosp. 1884-5. Rep. Advances in Obstet., Dis. Women and Children, 1889.

Martin, Roger, Raphine, Rockbridge Co., Va.—10.
Grad. M. D. Col. Phy. and Surg., Balto., 1888. Brd. 1888. Elec. 1899.

Martin, Willaim Read, Raphine, Rockbridge Co., Va.—10.
Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1908.

Mason, Drewry Hamilton, Ridgeway, Henry Co., Va.—5.
B. Mason, Va., Aug. 31, 1884. Educ. Locust Dale Acad. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907.

Mason, Edward Thomas, Savageville, Accomac Co., Va.—1.
B. Savageville, Va., Dec. 5, 1870. Grad. M. D. Univ. of Md. 1891. Brd. April, 1891. Elec. 1898. Present 1898. Res. Asst. Phy. Univ. of Md. Hosp. 1890-1.

Mason, Hatley Norton, Richmond, Henrico Co., Va.—3.
B. Charlotte, N. C., Sept. 5, 1880. Educ. Univ. Va. Grad. M. D. Univ. Va. 1904. Brd. June, 1904. Elec. 1904. Present 1904-8.

Mason, Luther S., Clover, Halifax Co., Va.—6.
B. Petersburg, Va., April 14, 1853. Grad. M. D. Col. Phys. and Surg., Balto., 1874. Elec. 1897. Present 1898, 1908.

Mason, Richard, The Plains, Fauquier Co., Va.—8.
B. Rutledge, Fauquier Co., Va., Nov. 14, 1868. Educ. Episcopal and Cleveland H. Schs. Grad. M. D. Univ. of South, 1899. Brd. June, 1899. Elec. 1904.

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Mason, William Julius, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., 1877. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. Dec., 1903. Elec. 1906.

Massie, Chas. Wm., Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. City of N. Y. 1880. Elec. 1884.

Mathews, Wm. P., Richmond, Henrico Co., Va.—3.
B. Pr. Edw. Co., Va., June 30, 1868. Educ. Manchester H. Sch. and B. A. Richmond Col. Grad. M. D. Med. Col. Va. 1890 Brd. 1890. Elec. 1890. Att. Sess. six. Mem. S. Surg. and Gyn. Assn.; of Am. Med. Assn.; of Chesterfield Co. Assn. Prof. Anat. Med. Col. Va., and Orthorp. Surg. Old Dom. Hosp. Papers, Ovarian Inguinal Hernia, Double Equino Varus, etc.

Maupin, Jr., George Washington Opie, Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., Sept. 14, 1845. Educ. Univ. Va. Grad. M. D. Bellevue Hosp. Med. Col., N. Y., 1869. Elec. 1873. Present 1873, 1881-5-8, 1898, 1905. Mem. Norfolk and Sea. Med. Socs.

May, John Fitzhugh, Waverly, Sussex Co., Va.—4.
B. Petersburg, Va., June 18, 1858. Educ. McCabe's Univ. Sch. Grad. M. D. Jeff. Med. Col. 1881. Elec. 1882. Present 1902. Mem. S. Side Va. Med. Assn.

Mayes, David Crowder, Church Road, Dinwiddie Co., Va.—4.
Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. Dec., 1905. Elec. 1908.

McAllister, George W., Hampton, Elizabeth City Co., Va.—1.
B. Verdon, Va., March 30, 1877. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899.

McCabe, William Otey, Thaxton, Bedford Co., Va.—6.
B. Bedford Co., Va., Dec. 10, 1870. Educ. Sunnyside H. Sch., Bedford City, Va. Grad. M. D. Balto. Med. Col. 1892, and Univ. Col. Med., Richmond, 1894. Post-Grad. Phila. Poly. 1903. Brd. April, 1894. Elec. 1894. Present 1894-7-9, 1900-1-3-4. Mem. Al. Assn. Univ. Col. Med., Am. Med. Assn., of Bedford Co. Med. Soc., Brd. Hlth. Bedford Co. Del. Internat. Cong. on Tuberculosis. Surg. N. & W. Ry. Co.

McCanless, William Oscar, Lafayette, Montgomery Co., Va.—6.
B. Stuart, Va., Feb. 22, 1847. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1875. Elec. 1906. Mem. Roanoke Co. Med. Soc.

McCaw, David, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Dec. 24, 1857. Grad. M. D. Med. Col. Va. 1884. Elec. 1887. Present 1887, 1894, 1908. Mem. Rich. Acad. Med. and Surg. Adj. Prof. Nerv. Dis., Med. Col. Va.

McChesney, Franklin Sayre, Shawsville, Montgomery Co., Va.—6.
Grad. M. D. Jeff. Med. Col., Phila., 1878. Brd. June, 1895. Elec. 1904.

McClung, Oscar Hunter, Fairfield, Rockbridge Co., Va.—10.
B. Fairfield, Va., June 23, 1879. Educ. Prep. Sch. and Univ. Va. Grad. M. D. Univ. Va. 1902. Brd. June, 1902. Elec. 1903.

McCormack, Joseph N, Bowling Green, Warren Co., Ky. Non-Res. Hon. Mem.
B. Nelson Co., Ky., Nov. 9, 1847. Educ. Pub. and Priv. Sch. Grad. M. D. Miami Med. Col., Cincinnati, O., 1870. Ad Eundem Deg., Med. Dept. Univ. of Louisville, Ky., 1873. LL. D. Central Univ. 1894. Elec. Non.-Res. Hon. Mem. 1903. Mem. Cris Co. and State Soc., Amer. Med.

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Assn. Secty. Ky. Brd. of Hlth. Pres. Ky. State Med. Soc., 1883-4. Chm. Com. on Organization of Am. Med. Assn., 1900-9.

McCormick, J. Jett, Norfolk, Norfolk Co., Va.—2.
B. Clarke Co., Va., Sept. 18, 1868. B. S. of Va. Mil. Inst. Grad. M. D. Univ. Va. 1892. Brd. 1892. Elec. 1898. Present 1898. Mem. Norfolk Med. Soc.

McCoy, William Kenneth, Gum Spring, Louisa Co., Va.—8.
B. Louisa Co., Va., Aug. 3, 1873. Grad. M. D. Med. Col. Va. 1900. Brd. July, 1899. Elec. 1900. Att. Phy. Dept. Dis. of Children, City (Richmond) Free Dis.

McCue, Frank Cyrus, Charlottesville, Albemarle Co., Va.—7.
B. Afton, Va., April 24, 1874. Educ. Greenwood and Charlottesville H. Schs. Grad. M. D. Univ. of Va. 1898. Brd. Sept., 1898. Elec. 1900. Present 1898-9, 1900-1-2-4-7-8. Post-Grad. Hosp., N. Y., 1908-9. Mem. Doctors' Club, Pied. Med. Soc., Am. Med. Assn. City Brd. Hlth. (1905-9). Surg. Branch Div. of S. R. R., Strasburg, Va., 1898-9

McCulloch, Charles, Howardsville, Albemarle Co., Va.—7.
B. Fort Wayne, Ind., June 2, 1873. Educ. McCabe's Sch., Episcopal H. Sch. and Univ. of Va. Grad. M. D. Columbian Univ., D. C., 1897. Brd. 1897. Elec. 1898. Grad. Vet. Surg. Am. Vet. Col., March, 1894. Mem. Va. St. Vet. Assn. Pres. Va. St. Brd. of Vet. Ex.

McCulloch, John Howard, Richmond, Henrico Co., Va.—3.
B. Henderson, W. Va., 1885. Grad. Sch. Sci., Ky. Univ. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908. Present 1908. Mem. Phi Rho Sigma Frat. H. Surg. St. Luke's Hosp., Richmond, 1908-9. Was Int. W. Va. St. Hosp. No. 1.

McCurdey, Neil Augustus, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., Dec. 15, 1871. Educ. Norfolk Pub. Sch. and Acad. Grad. M. D. Univ. of Va. 1896. Brd. 1896. Elec. 1900. Mem. Norfolk Med. So., of Am. Med. Assn.

McCutchan, Bolivar Buchanan, Clifton Forge, Alleghany Co., Va.—10.
B. Middlebrook, Augusta Co., Va., August 10, 1871. Educ. Graded Sch., Moffatt's Creek, Va., and Augusta Male Acad., Fort Defiance, Va. Grad. M. D. Univ. Col. of Med., Richmond, 1895. Brd. May, 1895. Elec. 1899. Mem. Augusta Co. Brd. Hlth. Phy. in charge Smallpox Hosp. Pittsylvania Co., Va.

McDannold, Newton E., R. F. D. 1, News Ferry, Halifax Co., Va.—6.
B. Warm Springs, Va., May 19, 1861. Educ. Augusta Male Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1900. Brd. June, 1899. Elec. 1901.

McDowell, Jr., Ivan Wodrow, Broadway, Rockingham Co., Va.—7.
B. Wardensville, W. Va., August 22, 1885. Educ. Wash. and Lee Univ. Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908. Present 1908.

McGill, Elisha Leavenworth, Petersburg, Dinwiddie Co., Va.—4.
B. Petersburg, Va., May, 1875. Educ. McCabe's Univ. Sch. and Va. Mil. Inst., 1897. Grad. M. D. Col. Phy. and Surg., N. Y., 1901. Brd. June, 1901. Elec. 1905. Mem. Petersburg Med. Fac.

McGowan, William A., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. of Va. April, 1897. Brd. June, 1897. Elec. 1899.

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McGuire, Hugh, Alexandria, Alexandria Co., Va.—8.
B. Richmond, Va., May 26, 1871. Educ. Priv. Sch. and Va. Mil. Inst. Stud. Med. Univ. of Va. Grad. M. D. Univ. Col. Med., Richmond, 1894. Contin. stud. in Hosps. Brd. Va., 1894, and Md. 1895. Elec. 1894. Present 1894, 1903, 4, 8. Asst. to Chair Clin. Surg. Univ. Col. Med., Richmond, 1894-5. Secty. Alex. Med. Soc. Mem. Am. Med. Assn. Author of one of Prize Essays on Hist. of Med. and Surg. in Va.

McGuire, Hunter Holmes, Winchester, Frederick Co., Va.—7.
B. Winchester, Va., March 30, 1875. Educ. S. V. and Winchester Acads. Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. Sept., 1897. Elec. 1898. Present 1898, 1908.

McGuire, Joseph Albert, Farmersville, Collin Co., Tex.
B. Cedar Bluff, Va., March 17, 1876. B. S. of Emory and Henry Col. Grad. M. D. Univ. of Va. 1900. Brd. Dec., 1900. Elec. 1901.

McGuire, Stuart, Richmond, Henrico Co., Va.—3.
B. Staunton, Va., Sept. 16, 1867. Educ. Richmond Col. Grad. M. D. Univ. Va. 1891. Brd. 1891. Elec. 1891. Present 1891-2-4-6-9, 1900-1-2-3-4-5-6-7-8. Pres. 1908-9. Mem. Am. Med. Assn.; Rich. Acad. Med. and Surg.; of So. Surg. and Gyn. Assn.; of Tri-State Med. Soc.; Surg. in charge St. Luke's Hosp.; Pres. and Prof. Prin. Surg. and Clin. Surg. Univ. Col. Med., Richmond.

McGuire, William Edward, Richmond, Henrico Co., Va.—3.
B. Clarke Co., Va., 1861. Grad. M. D. Univ. Va. 1886. Brd. 1886. Elec. 1886. Att. Sess. all 1886 to 1908, incl., except 3. On Bus. Com.; Mem. Am. Med. Assn. 1896-1909; of Am. Assn. of Gyn. and Obstet. 1894-1904; of S. Surg. and Gyn. Assn. 1888-1909; Tri-St. Med. Assn.; Gyn. to Va. Hosp., Richmond; Prof. Gyn. Univ. Col. Med., Richmond; Ex-Pres. Rich. Acad. Med. and Surg.

McGuire, Wm. P., Winchester, Frederick Co., Va. Res. Hon. Mem.—7.
B. Winchester, Va., July 19, 1845. Educ. Winchester and Greenwood Acads. Grad. M. D. Med. Col. Va. 1867. Elec. 1873. Hon. Mem. 1894. Present 1873-5-8-9, 1881-2-7, 1892-2-3-4-8, 1908. V.-Pres. 1878-9, 1892. Pres. 1893-4. Rep. on Surg. Mem. Med. Ex. Brd. since organization 1885. Councilor 7th Dist. 1908-9.

McGuire, William Pendleton, Wylliesburg, Charlotte Co., Va.—6.
B. Houston, Va., March 6, 1874. Educ. Houston (Va.) Acad. Grad. M. D. Balto. Med. Col. 1903. Brd. Dec., 1904. Elec. 1905. Inventor and patentee Gyn. and Surg. operating robe.

McIntosh, Donald Munro, Portsmouth, Norfolk Co., Va.—2.
B. Lochgilphead, Argylesshire, Scotland, Nov. 14, 1881. Educ. Bon Air Acad. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1905. Elec. 1905. Present 1905. Mem. McDowell Co. (N. C.) Med. Soc.; of Norfolk (Va.) Med. Soc.

McKean, Edward Sanderson, Goshen Bridge, Rockbridge Co., Va.—10.
Grad. M. D. Univ. of Va. 1881. Elec. 1904.

McKee, James Braxton, Fairwood, Grayson Co., Va.—5.
Grad. M. D. Vanderbilt Univ. 1890. Brd. 1890. Elec. 1891. Present 1894.

McKee, Thomas K., Chilhowie, Smyth Co., Va.—9.
Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. 1897. Elec. 1904.

McLemore, William Thomas, Courtland, Southampton Co., Va.—2.
B. Southampton Co., Va., Jan. 8, 1874. Educ. Locust Dale Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1900.

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McNair, Robert Tannahill, Emporia, Greenesville Co., Va.—4.
B. Edgecombe Co., N. C., Nov. 16, 1879. Educ. Scotland Neck (N. C.) Mil. Acad. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1904. Mem. Chesterfield Co. Med. Soc.; of S. S. Va. Med. Assn. Med. Ex. S. Atlantic L. Ins. Co. and Woodmen of World. Papers, After Treatment of Abortion, 1904. Res. Phy. Retreat for Sick, Richmond, one year.

McPhail, Donald, Randolph, Charlotte Co., Va.—6.
Grad. M. D. Med. Col. Va. 1878. Prac. prior to Brd. Elec. 1908.

McWhorter, James Kyle, Hampden-Sidney, Prince Edward Co., Va.—4.
B. Abbeville, S. C., Nov. 6, 1844. Educ. Priv. Schls. and under father. Grad. M. D. Univ. of Ga., Augusta, 1867. Prac. prior to Brd. Elec. 1908. Surg. C. S. A. under Genls. Wade Hampton, M. C. Butler and Col. H. K. Aiken.

Meade, Emmett W., R. F. D. No. 1, Castlewood, Russell Co., Va.—9.
Grad. M. D. Med. Col. Va. 1892. Brd. April, 1892. Elec. 1904.

Meade, James O., Fugates Hill, Russell Co., Va.—9.
B. Dickensonville, Va., April 9, 1873. Educ. Oak Grove H. Sch. Grad. M. D. Tenn. Med. Col. 1898. Brd. 1899. Elec. 1904. Present 1904. Mem. and V.-Pres. Russell Co. Med. Soc. Papers, several.

Mears, John Bowdoin, U. S. S. "Franklin," Norfolk, Norfolk Co., Va.—2.
B. Keller, Va., July 24, 1879. Educ. Margaret Acad. and Univ. of Va. Grad. M. D Univ. of Va. June, 1901. Brd. June, 1902. Elec. 1902. Present 1900. Int. Christ Hosp. Mem. of Am. Med. Assn.; of Assn. Mil. Surg. U. S.; Asst. Surg. U. S. Navy. Grad. U. S. Naval School, D. C. 1906.

Mease, Monsey Edgar, Sandy Level, Pittsylvania Co., Va.—5.
Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1906.

Meeks, William D., Massie's Mills, Nelson Co., Va.—10.
B. Nelson Co, Va., Sept. 15, 1860. Educ. Va. Agric. and Mech. Col. Grad. M. D. Col. Phys. and Surg., Balto., 1883. Elec. 1884. Present 1889, 1891-2-4, 1908. Mem. Am. Med. Assn.; Ex. Equit. L. Assur. Soc. U. S. Papers, Case of Skin Coloring from Continued Use of Nitrate of Silver, 1888.

Melvin, Henry B., Houston, Halifax Co., Va.—6.
Grad. M. D. Med. Col. Va. 1858. Elec. 1880.

Mendelsohn, Ludwig, Norfolk, Norfolk Co., Va.—2.
B. Courtland, 1871. Grad. M. D. Fredrich-Welhelms Univ. 1896. Brd. Dec., 1902. Elec. 1903.

Mercer, Charles Wilbur, Blackstone, Nottoway Co., Va.—4.
B. Richmond, Va., April 3, 1880. Educ. Rich. Pub. Sch. and McCabe's Univ. Sch. Grad. M. D. Med. Col. Va. 1904. Brd. Dec., 1904. Elec. 1905. Res. Phy. City (Rich.) Hosp. and Ambulance Surg., 1904-5.

Mercer, William Florence, Richmond, Henrico Co., Va.—8.
B. Richmond, Va., Feb. 13, 1862. Educ. Richmond Col. Grad M. D. Med. Col. of Va. 1882. Elec. 1884. Resigned. Re-elected 1899. Present 1899, 1900, 4, 8. Mem. Richmond Acad. Med. and Surg.; of S. C. Med. Assn. Adj. Prof. Dis. of Eye, Ear and Throat, Med. Col. of Va. 7 years until moved from State, 1894.

Merchant, William Fewell, Manchester, Chesterfield Co., Va.—8.
B. Manassas, Va., March 10, 1868. Educ. Pub. and Priv. Schls. Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. Sept., 1897. Elec. 1904.

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Mem. Chesterfield Co. Med. Soc.; of Assn. Surg. So. Ry.; Phy. to S. Ry., to Rich. Wood Working Co., etc.

Meredith, William, Gouldin, Hanover Co., Va.—3.
B. Hanover Co., Va., Jan. 20, 1865. Educ. Priv. Sch. Grad. M. D. Med. Col. Va. 1886. Brd. April, 1886. Elec. 1886. Present 1886-7, 1894, 1908.

Meriweather, George Douglas, Buena Vista, Rockbridge Co., Va.—10.
B. Bedford Co., Va., Sept. 22, 1842. Grad. M. D. Univ. Pa. 1870. Elec. 1884. Present 1884, 5, 6, 7, 8, 9, 1890, 1, 2, 3. Ex-Mem. Med. Ex. Brd. Va.

Meriweather, J. A., Holcomb Rock, Bedford Co., Va.—6.
Grad. M. D. N. Y. Col. 1882. Elec. 1888.

Merrick, Thomas D., Richmond, Henrico Co., Va.—3.
B. Ingleside, Md., Oct. 20, 1862. Educ. Randolph-Macon Col. Grad. M. D. Jeff. Med. Col., Phila., 1888. Brd. Sept., 1895. Elec. 1897.

Merritt, Daniel Tatum, Nathalie, Halifax Co., Va.—6.
B. South Boston, Va., July 6, 1869. B. A., B. Sc. Hampden-Sidney 1893. Grad. M. D. Univ. Col. of Med. 1896. Brd. May, 1895. Elec. 1897.

Michaux, Jacob, Richmond, Henrico Co., Va. Res. Hon. Mem.—3.
B. Powhatan Co., Va., August 31, 1851. Educ. Blue Ridge H. Sch., Univ. Va. Grad. M. D. Med. Col. Va. 1876. Elec. 1878. Present 1878, 1880, 3, 6, 7, 9, 1890, 2, 3, 4, 5, 6, 8, 9, 1908. Mem. Ex. Com. 1883-1890, V.-Pres. 1894. Orator 1892. Pres. 1898. Hon. Mem. 1899. Pres. Rich. Acad. Med. 1888. Surg. 1st Regt. Va. Vol. 1882-4. Prof. Mat. Med. 1894-6, and Obstet. 1896-1909, Univ. Col. Med.

Michaux, Stuart N., Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1904. Elec. 1904.

Micklem, Austen, Rockfish, Nelson Co., Va.—10.
B. Berkshire, Eng., 1854. Grad. M. D. Med. Col. Va. 1891. Brd. 1891. Elec. 1897. Present 1897.

Middleton, B. Arthur, Emmerton, Richmond Co., Va.—1.
Grad. M. D. Col. Phy. and Surg., Balto., Md., 1877. Elec. 1904.

Miles, Henry Morgan, Wise, Wise Co., Va.—9.
B. Jonesville, Va., August 14, 1867. Educ. Jonesville Inst. Grad. M. D. Louisville Med. Col. 1890. Brd. June, 1903. Elec. 1903. Pres. Wise Co. Med. Assn.

Miller, Clifton Meredith, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., April 21, 1873. Educ. Priv. Sch. and Richmond Col. Grad. M. D. Med. Col. Va. 1892. Brd. 1894. Elec. 1894. Present 1894, 1908. Mem. Ex. Com. 1902-8; Am. Med. Assn.; of Rich. Acad. of Med. and Surg. (Pres. 1908); of Assn. Am. Anat.; of Soc. Al. Med. Col. Va. (Pres. 1903-4). Prof. Anat. 1905-6. Dis. Nose and Throat 1906-9 Med. Col. Va.

Miller, Jr., Edward Howe, Danville, Pittsylvania Co., Va.—5.
B. Danville, Va., June, 10, 1880. Educ. Phillips Exter. Acad. Grad. M. D. Univ. Va. 1904. Brd. June, 1904. Elec. 1905. Present 1905.

Miller, Ephraim Rufus, Harrisonburg, Rockingham Co., Va.—7.
B. Spring Creek, Rockingham Co., Va., Nov. 28, 1873. Educ. Bridgewater Col. Grad. M. D. Med. Col. of Va. April, 1898. Brd. Sept., 1898. Elec. 1899. Present 1899. Mem. Co. Brd. Hlth; of Med. Soc. Rockingham Co.

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Miller, Frederick C., Cobham, Albemarle Co., Va.—7.
B. Louisville, Ky., Nov. 9, 1868. Educ. Louisville Male H. Sch. Grad. M. D. Louisville Med. Col. 1890. Brd. Dec., 1903. Elec. 1904. Mem. Pied. Med. Soc.

Miller, Gideon Brown, 1730 K Street, Washington, D. C.
B. Laurel Mills, Va., 1861. Grad. V. M. I. (First Jackson-Hope Medalist) B. S. and C. E. Grad. M. D. Univ. of Va. 1890. Brd. 1891. Elec. 1904. Mem. Am. Med. Assn.; of Med. Soc. D. C.; of Clinico-Path. and Obstet. Soc., D. C.; For. Res. Gyn. Johns Hop. Hosp.; Gyn. to Cent. Dis. and Emerg.; Hosp. Asso. Gyn. Column. Hosp., D. C. Papers, Dif. Diag. between Strep. and Gonorrh. Pelvic Infect., 1904.

Miller, Godfrey L., Winchester, Frederick Co., Va.—7.
Grad. M. D. Winchester Med. Col. 1859. Elec. 1893.

Miller, Hiram H., Elkton, Rockingham Co., Va.—7.
B. Elkton, Va., 1839. Educ. So. River and New Market Acads. Grad. M. D. Med. Col. Va. 1861. Elec. 1903. Mem. Mo. Med. Assn.

Miller, James McTeer, Crockett, Wythe Co., Va.—9.
B. Grayson Co., Va., 1870. B. S. Emory and Henry Col. Grad. M. D. Col. P. and S., Balto., 1896. Brd. 1896. Elec. 1901. Present 1901. Mem. Wythe Co. Brd. Hlth. Ex. Equit., Pa. Mut., and Home L. Ins. Cos.

Miller, James Wallace (R. F. D. 1), Sinking Creek, Craig Co., Va.—9.
B. Sinking Creek, Va., Oct. 12, 1874. Educ. Roanoke Col. Grad. M. D. Univ. Col. Med., Richmond, 1902. Brd. June, 1905. Elec. 1905.

Miller, John David, Bridgewater, Rockingham Co., Va.—7.
B. Spring Creek, Va., May 7, 1870. B. A. of Bridgewater Col. Lic. of Inst. Peabody Nor. Col., Nashville, Tenn. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1906.

Miller, J. Judd, Norfolk, Norfolk Co., Va.—2.
B. Madison, Va., July 28, 1872. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1897. Elec. 1901. Int. St. Vincent's Hosp., Norfolk, Va., 1899.

Miller, Roshier W., Barton Heights, Henrico Co., Va.—3.
B. Washington, D. C., January 31, 1870. Educ. Newtown Acad., Pa. Grad. Ph. G. 1895 and M. D. 1897 Univ. Col. of Med., Richmond. Brd. spring 1897. Elec. 1898. Mem. Va. Phar. Soc.; of Rd. Acad. of Med. and Surg.; Chm. Com. on Prize Essays, Va. Phar. Soc. Dir. Phar. Lab., Lect. on Tox. (Phar. Dept.), and Asst. to Chair Nerv. Dis. Univ. Col. Med., Richmond. Papers, Antipyretics; Adulterations.

Miller, Walter Peck, Newport, Giles Co., Va.—9.
Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. June, 1898. Elec. 1901.

Milton, Joseph V., Hamilton, Loudoun Co., Va.—8.
B. Hamilton, Va. Educ. Danville (Va.) Mil. Inst. Grad. M. D. Univ. of Md. 1901. Brd. Dec., 1903. Elec. 1906.

Mitchell, Joseph Henry, Dillwyn, Buckingham Co., Va.—10.
B. Alchie, Va., Oct. 29, 1863. Educ. Pub. and Priv. Sch. and Locust Dale Acad., Madison Co., Va. Grad. M. D. Balto. Med. Col. 1895. Brd. W. Va. 1895, and Va. 1896. Elec. 1898. Att. Post.-Grad. Course Jeff. Med. Col., Phila., 1898-9.

Moncure, Charles Henry, Orange, Orange Co., Va.—8.
Grad. M. D. Med. Col. Va. 1880. Elec. 1889.

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Moncure, Powhatan, Bealton, Fauquier Co., Va.—8.
B. Stafford Co., Va., April 3, 1861. Educ. Green Level Acad. Grad. M. D. Med. Col. Va. 1884. Elec. 1886. Present 1886, 1908. V.-Pres. N. E. Va. Med. Soc. Papers, Treatment of Cholera Infantum, Clinical Reports, etc.

Moncure, Philip St. L., Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Med. Col. of Va. 1897. Brd. June, 1896. Elec. 1900.

Monroe, Archie Clay, Morrisville, Fauquier Co., Va.—8.
B. Rockford, Va., June 2, 1883. Educ. Pub. and Priv. Schs. Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1907.

Montgomery, Benjamin James, Redlawn, Mecklenburg Co., Va.—4.
B. Mecklenburg Co., Va., April 16, 1884. Educ. Pub. Schs. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1905.

Montgomery, Clarence Vernon, South Hill, Mecklenburg Co., Va.—4.
B. Mecklenburg Co., Va., Feb. 22, 1882. Educ. Danville Mil. Inst. and Chester Spgs. Acad. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. 1905. Elec. 1905.

Moomaw, Benjamin C., Roanoke, Roanoke C., Va.—6.
B. Montgomery Co., Va., Dec. 11, 1874. Educ. Alleghany Acad., Roanoke, Va., and Jesuits' Col. Pa. Grad. M. D. Univ. of Va. 1899. Brd. June, 1900. Elec. 1905. Present 1905. Mem. and Treas. Roa. Acad. of Med. Papers, Pneumonia, 1904; Abortion, 1905.

Moon, Schuyler Barclay, Richmond, Henrico Co., Va.—3.
B. Scottsville, Va., Jan. 30, 1867. A. B. and C. E. of Wash. and Lee Univ. Grad. M. D. Univ. Col. of Med., Richmond, 1905. Brd. June, 1905. Elec. 1905. Mem. Richmond Acad. of Med. and Surg. Instr. Hist. and assist. Pasteur Inst., Univ. Col. of Med., Richmond, 1905-6.

Moore, Garland Payne, Cape Charles City, Northampton Co., Va.—1.
B. Eastville, Va., 1864. Educ. Randolph-Macon Col. Grad. M. D. Col. Phy. and Surg., Balto., 1886. Brd. 1886. Elec. 1902. Present 1902. Mem. Med. Soc. of E. Shore Va. Surg. in chief N. Y. P. and N R. R. Secty. U. S. Brd. of Ex. Surg; of Co. Brd. of Hlth. Papers, Treatment of Erysipelas.

Moore, Joseph Boardman, Aylett, King William Co., Va. Res. Hon. Mem.—3.
B. King William Co., Va., Sept. 21, 1834. Educ. Rich. Col. Univ. Va. Grad. M. D. Jeff. Med. Col. 1856. Elec. 1887. Hon. Mem. 1906. Present 1887, 8, 1891, 4, 8. V.-Pres. 1891. Mem. King Wm. Co. Med. Assn. Act. Assist. Surg. C. S. A. Med. Ex. Val. Mut. and N. Y. L. Ins. Cos. Mem. Med. Ex. Brd. Va. 1893, 4. Papers, Uterine Displacements, 1879.

Moore, Lawson Botts, R. F. D. 1, Sherwood, Rockbridge Co., Va.—10.
B. Berryville, Clarke Co., Va., July 25, 1862. Educ. Potomac Acad., Alex., Va. Grad. M. D. Univ. of Md., Balto., 1887. Brd. spring 1887. Elec. 1903.

Moore, Ray Atkinson, Neola, Greenbrier Co., W. Va.
B. P. Ed. Co., Va., 1880. A. B. of Hampden-Sidney Col. 1900. Grad. M. D. Univ. Col. Med., Richmond, 1906. Brd. June, 1906. Elec. 1906. Present 1906. Offic. Reporter of Sess. 1903, 4, 5, 6, 7. Res. Phy. Va. Hosp. 1906-7. Hospt. steward 70th Reg. Va. Vols., Surg. to J. R. Droney Lumber Co.

Moore, R. E., Wytheville, Wythe Co., Va.—9.
Elec. 1872.

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Moore, Samuel Braders, Alexandria, Alexandria Co., Va.—8.
B. Okonoko, W. Va., 1872. Educ. St. John's Acad. 1890. Grad. M. D. Georgetown Univ. 1897. Brd. fall 1897. Elec. 1902. Present 1897, 1908. Mem. (and Pres.) Fairfax Co. Med. Soc., Co. (Fairfax) Brd. of Hlth. Papers, Acute Parenchymatous Nephritis; Gastric Ulcer, 1900; Milk a Source of Impurity, 1902.

Moore, William Cabell, Berryville, Clarke Co., Va.—7.
B. Washington, D. C., April 28, 1879. B. A. Univ. of Va. Grad. M. D. Univ. of Va. 1902. Brd. Dec., 1902. Elec. 1905. Mem. Wise Co. Med. Soc.; of S. W. Va. Med. Soc.

Moorman, John A., Hendricks Store, Bedford Co., Va.—6.
B. Bedford Co., Va., Dec. 19, 1843. Educ. Westwood Mil. Sch., New London Acad. Grad. M. D. Univ. Md. 1868. Ad Eundem Degree Bellevue Hosp. Med. Col. 1873. Elec. 1885. Present 1889, 1891.

Moorman, John Hope, Conicville, Shenandoah Co., Va.—7.
B. Haleford, Franklin Co., Va., May 6, 1883. Educ. Randolph-Macon Acad., Bedford City, Va. Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908. Med. Ex. Mut. L. and Mut. Ben. L. Ins. Cos.

Moorman, Thomas Edward, Gladys, Campbell Co., Va. Res. Hon. Mem.—6.
B. Campbell Co., Va., August 29, 1834. Grad. M. D. Med. Col. of Va. 1860. Elec. 1885. Hon. Mem. 1906. Asst. Surg. C. S. Army.

Moran, McCandlish Monroe, Pinners Point, Norfolk Co., Va.—2.
B. Mathews Co., Va., Sept. 24, 1873. Educ. Wm. and Mary Col., Va. Student two years Univ. of Md., Balto. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1902. Present 1902, 4, 6, 8. Mem. Am. Med. Assn.; of Sea. Med. Assn. Papers, Plea for Use of Calomel in Typhoid Fever, 1902. Asst. Surg. N., P. and N. N. Elec. Ry. Co. Surg. A. C. L. Ry. Co. Med. Ex. several L. Ins. Cos.

Morgan, Lucius Daniel, Gladys, Campbell Co., Va.—6.
B. Bedford Co., Va., 1870. Educ. Sunnyside Acad. and Bedford H. Sch. Grad. M. D. Med. Col. Va. 1903. Brd. Dec., 1903. Elec. 1904. Present 1901, 3. Mem. Bedford Co. Med. Soc.; of Am. Med. Assn. Papers, Summer Diarrhoea as Seen in Children.

Moritz, John Diedrick, Cismont, Albemarle Co., Va.—7.
Grad. M. D. Univ. of Md. 1904. Brd. Dec., 1906. Elec. 1907.

Morrison, Frank Jordan, Chuckatuck, Nansemond Co., Va.—2.
B. Smithfield, Va., May 14, 1882. Grad. M. D. Univ. of South, Sewanee, Tenn., 1903. Brd. Dec., 1904. Elec. 1905.

Morrison, Henry Rutherford, Rockbridge Baths, Rockbridge Co., Va.—10.
Grad. M. D. Univ. of Va. 1887. Brd. 1887. Elec. 1904.

Morrison, James, Lynchburg, Campbell Co., Va.—6.
B. Lexington, Va., Nov. 2, 1871. A. B. of Hampden-Sidney Col. Grad. M. D. Univ. Va. 1898. Brd. Aug., 1898. Elec. 1901. Present 1901.

Morriss, Garland Lightfoot, Buckingham, Buckingham Co., Va.—10.
B. Richmond, Va., 1878. Educ. Hampden-Sidney Col. Grad. M. D. Univ. Col. of Med., Richmond, 1902. Brd. July, 1902. Elec. 1904. Mem. Phi Chi; of Ambulance Corps, Richmond Hosp.; Secty. Brd. of Hlth, Buckingham Co.

Mosby, Ernest, Waynesboro, Augusta Co., Va.—10.
B. Richmond, Va., Dec. 6, 1876. B. A. Richmond Col. Grad. M. D. Med. Col. Va. 1899. Brd. June, 1899. Elec. 1899. Int. U. S. M. Hosp., Boston, Mass., 1899, 1900.

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Moseley, Edward Julian, Richmond, Henrico Co., Va. Res. Hon. Mem. Founder.—3.
B. Chesterfield Co., Va., Jan. 28, 1838. Educ. Hampden-Sidney Col. Grad. M. D. Univ. City, N. Y., 1860. Charter Mem. 1870. Resigned 1879. Re-elected 1887. Hon. Mem. 1904. Present 1870, 5, 8, 1887, 1894, 1904, 8. Phy. to Rich. Male Orphan Asy.

Moseley, Jr., Edward Julian, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Dec. 1, 1873. Educ. Richmond Col. Grad. M. D. Univ. Col. of Med., Richmond, 1896. Brd. June, 1896. Elec. 1897. Present 1898, 1908. Mem. Rich. Acad. Med. and Surg.; Asst. Dem. Anat., Univ. Col. Med., Rich.

Moseley, Samuel H., Ebony, Brunswick Co., Va.—4.
B. Ebony, Va., Oct. 28, 1873. Educ. Randolph-Macon Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1899.

Motley, James Coleman, Welch, McDowell Co., W. Va.
B. Gurneys, Caroline Co., Va., April 22, 1880. Educ. McGuire's Sch. and Rich. Col. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907. Res. Phy. Mem. Hosp., Richmond, 1906-7.

Mulford, Ephraim Roland, R. F. D. 1, Red Hill, Albemarle Co., Va.—7.
Grad. M. D. Univ. of Va. 1903. Brd. Dec., 1903. Elec. 1905.

Murdoch, Lester H., Clinchport, Scott Co., Va.—9.
B. Ill. Jan. 19, 1869. Educ. Kan. St. Nor. Sch. Grad. M. D. Med. Dept. Geo. Wash. Univ. 1906. Brd. June, 1906. Elec. 1907.

Murray, William W., Suffolk, Nansemond Co., Va.—2.
Grad. M. D. Queen's (now Royal) Univ., Dublin, Ireland, 1869. Elec. 1905.

Murrell, Edward H., Lynchburg, Campbell Co., Va.—6.
B. 1825. Grad. M. D. Univ. of Pa. 1868. Prac. prior to St. Brd. of Ex. Elec. 1907.

Murrell, Thomas Whitehead, Richmond, Henrico Co., Va.—3.
B. Lynchburg, Va., Oct. 2, 1880. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1902. Present 1902, 4, 5, 6, 7, 8. Res. Phy. City (Richmond) Almshouse Hosp. 1901, 2. Post-Grad. in Derm., London, Eng., 1904. Head of Genito-Urin. Dis. Lect. on Derm. and Syph. Univ. Col. Med., Rich. Mem. Am. Med. Assn., Rich. Acad. of Med. and Surg.

Muse, Ernest Helm, Roanoke, Roanoke Co., Va.—6.
B. Helms Store, Franklin Co., Va., Sept. 10, 1880. Educ. Roa. H. Sch. and Nat. Bus. Col. Grad. M. D. Univ. Col. of Med., Richmond, 1907. Brd. 1907. Elec. 1907. Mem. Phi Beta Pi Frat., Univ. Col. of Med.

Musser, John Herr, 1927 Chestnut St., Philadelphia, Pa. Non-Res. Hon. Mem.
B. Strasburg, Pa., 1856. Educ. Williamsville St. Nor. Sch. Grad. M. D. Univ. of Pa. 1877. Elec. Non-Res. Hon. Mem. 1900. Present 1900. Mem. Col. of Phy. and Surg., Phila.; Richmond Acad. of Med. and Surg.; Am. Med. Assn.; Prof. Clin., Med. Univ. Pa. Paper for Soc., Chronic Myocarditis, 1900.

Myers, George Thomas, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., Nov. 7, 1877. Educ. Va. Poly. Inst. Grad. M. D. Med. Col. Va. 1901. Brd. Dec., 1901. Elec. 1905. Present 1905. Mem. Norfolk Med. Soc.

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Myers, Harry L., Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Univ. of Va. 1889. Brd. 1889. Elec. 1889. Adj. Prof. Dis. Eye, Ear and Throat. Univ. Col. of Med., Richmond, until 1894.

Myers, Henry S., Forks of Buffalo, Amherst Co., Va.—10.
Grad. M. D. Med. Col. Va. 1892. Brd. April, 1892. Elec. 1894. Present 1894.

Nash, Francis Smith, Marine Recruit. Sta., Philadelphia, Pa.
B. Cumberland Co., Va., Nov. 23, 1854. A. B. of Hampden-Sidney. Grad. M. D. Univ. of Va. 1877. Elec. 1893. Mem. Med. Soc. D. C.; Med. Assn., D. C.; Washington Obstet. and Gyn. Soc., and Med. Corps, U. S. N.

Nash, Herbert Milton, Norfolk, Norfolk Co., Va. Res. Hon. Mem.—2.
B. Norfolk, Va., May 31, 1831. Educ. Norfolk Class. Sch.., Norfolk Mil. Acad. Grad. M. D. Univ. Va. 1852. Elec. 1871. Present 1873, 5, 1886-7-8-9, 1891-2-3-4-7-8. Pres. 1892. V.-Pres. 1878, 1886. Hon. Mem. 1893. Mem. Med. Ex. Brd. Va. 1885-1908. Mem. Am. Med. Assn.; So. Surg. and Gyn. Assn.; Norfolk Med. Soc.; Pres. Norfolk City Brd. Hlth.; Quar. Com'r Eliz. River Dist.; Surg. C. S. A.

Neal, William Oscar, R. F. D. 1, Tazewell, Tazewell Co., Va.—9.
B. Asbury, Tazewell Co., Va., Jan. 21, 1877. Educ. Pub. Sch. and Emory and Henry Col. Grad. M. D. Univ. Va. 1901. Brd. Dec., 1903. Elec. 1908. Mem. Tazewell Co. Med. Soc.

Neblett, Clarence Percival, Burts, Sussex Co., Va.—4.
B. Va. Oct. 14, 1870. Grad. M. D. Med. Col. Va. 1896. Brd. June, 1897. Elec. 1898. Mem. Al. Soc. Med. Col. Va.

Neff, John Henry, Harrisonburg, Rockingham Co., Va.—7.
B. Shenandoah Co., Va., Oct. 11, 1843. A. M. Roanoke Col. Grad. M. D. Univ. Va. 1870; Univ. City N. Y. 1871. Elec. 1882. Present 1884, 6, 7, 8, 9, 1893, 8. Mem. Med. Ex. Brd. Va. 1885 to Nov., 1891. H. Phys., Char. Hosp., N. Y., 1871, 2. Phy. to Smallpox and Fever Hosps., N. Y. City, 1872, 3.

Neilson, J. T., Emory, Washington Co., Va.—9.
B. Greene Co., Tenn., Sept. 7, 1859. Educ. Emory and Henry Col. Grad. M. D. Louisville Univ., 1882. Elec. 1892. Post-Grad. Course Univ. of N. Y. 1890, 1. Med. Ex. for N. Y., Mut. Home, Mut. Ben. and Wash. L. Ins. Cos. Ex-Pres. Wash. Co. Med. Soc.

Nelson, Andrew Jefferson, Seattle, King Co., Wash.
B. Spring Hill, Va., Sept. 17, 1861. Educ. Gordonsville Gra. and Miller Schl. Grad. M. D. Columbian Univ., D. C., 1893. Brd. Sept., 1895; of Wash. Jan., 1908. Elec. 1896. Present 1896, 7, 8. Act. Asst. Surg. U. S. Pub. H. and M. Hosp. Serv.; on Spec. Duty in Suppress. Bubonic Plague in Seattle, 1907-8. Papers, Septicaemia; Hutchinson's Teeth in Tertiary Syphilis.

Nelson, Frank Walker, Forest Depot, Bedford Co., Va.—6.
B. Elk Hill, Bedford Co., Va. Educ. Univ. Va. Grad. M. D. Jeff. Med. Col., Phila., 1880. Elec. 1904. Mem. Bedford Co. Med. Assn.

Nelson, Hugh Thomas, Charlottesville, Albemarle Co., Va.—7.
B. Powhatan Co., Va., Oct. 25, 1876. Educ. Priv. Sch. and Univ. of Va. Grad. M. D. Univ. of Va. 1899. Brd. June, 1906. Elec. 1906. Present 1906, 1908. Mem. Pied. Med. Soc.; of Al. Soc. N. Y. Hosp. Inst. Genito-Urin. Dis. Univ. Va.; Genito-Urin. Surg. to Univ. Hosp.; ex-Asst. Surg. U. S. Navy.

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Nelson, John Garnett, Richmond, Henrico Co., Va.—3.
B. Fauquier Co., Va., Nov. 13, 1872. B. A. and M. A. Univ. of Va. Grad. M. D. Univ. Col. of Med., Richmond, 1900. Brd. June, 1900. Elec. 1901. Mem. Rich. Acad. of Med. and Surg. Clin. Asst. of Chair of Clin. Med., Univ. Col. of Med., Rich. 1901-5.

Nelson, John J., Columbia, Fluvanna Co., Va.—10.
Grad. M. D. Univ. of Va. 1876. Elec. 1902.

Nelson, Nathan W., 824 St. Nicholas Avenue, New York, N. Y.
Grad. M. D. Col. Phy. and Surg., N. Y. City, 1903. Brd. June, 1905. Elec. 1906.

Nelson, Robert William, Charlottesville, Albemarle Co., Va.—7.
B. Albemarle Co., Va. Educ. H. Sch., Alexandria, and Univ. Va. Grad. M. D. Jeff. Med. Col. 1846. Elec. 1872. Att. Sess. all except four. Vice-Pres. 1875. Surg. C. & O. Ry. Co. Hlth. Off. Charlottesville, Va. Was member of former Med. Soc. Va. until its dissolution by the war.

Nelson, William Winfield, Richmond, Henrico Co., Va.—3.
B. Somerset Co., Md., June 16, 1880. Educ. W. Point Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1902. Present 1902, 8.

Nevitt, Napoleon B., Accotink, Fairfax Co., Va. Res. Hon. Mem.—8.
B. Newington, Fairfax Co., Va. Educ. by tutors. Grad. M. D. Univ. of Md. 1857. Elec. 1873. Hon. Mem. 1906. Att. Sess. several. Was Asst. Surg., then Surg. C. S. A.

Nevitte, Richard Randolph, Temperanceville, Accomac Co., Va.—1.
B. Fairfax Co., Va., 1872. Educ. Wash. Sch. No. 1, Alexandria, Va. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1902. Mem. Al. Univ. Col. of Med.

Newbill, Chris F., Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Col. Phys. and Surg., Balto., 1885. Elec. 1886.

Newman, Walter A., Manassas, Prince William Co., Va.—8.
Grad. M. D. Med. Col. Va. 1876 and Univ. City of N. Y., 1878. Elec. 1894. Present 1894, 1908.

Newton, McGuire, Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. Col. of Med., Richmond, May 1897. Brd. 1898. Elec. 1898.

Nichols, Rudolph Angus, Richmond, Henrico Co., Va.—3.
B. Orange Co., Va., July 17, 1873. Educ. L. S. Squire's Sch., Pub. Schs., and Rich. Col. Grad. M. D. Med. Col. Va. April, 1895. Brd. May, 1895. Elec. 1895. Mem. Rich. Acad. Med. and Surg. Surg. in Charge Dis. Med. Col. Va. Papers, Classification, Etiology and Symptomatology of Intestinal Obstruction, 1895.

Nicholson, Nathaniel A., Creeds, Princess Anne Co., Va.—2.
B. Warren Co., N. C., March 4, 1880. Educ. Randolph-Macon Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. June, 1901. Elec. 1901. Mem. Sea. Med. Assn.

Nixon, Edwin Jones, Tappenish, Yakima Co., Wash.
Grad. M. D. Univ. of Md. 1899. Brd. May, 1889. Elec. 1904.

Noblin, Joseph Alexander, Roda, Wise Co., Va.—9.
B. Snowflake, Va. Aug. 18, 1880. Educ. Shoemaker's Col. Gate City, Va. Grad. M. D. Hosp. Col. Med., Louisville, Ky., 1907. Brd. Dec., 1907. Elec. 1908.

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Northington, James Montgomery, Boardman, Columbus Co., N. C.
B. Mecklenburg Co., Va., Oct. 11, 1885. Educ. Petersburg H. Sch. and priv. tutors. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905. Present 1905. Res. Phy. Mem. Hosp., Richmond, 1905, 6 Inst. Phys. Med. Col. Va. 1906, 7.

Northington, Samuel Sterling, South Hill, Mecklenburg Co., Va.—4.
B. Forksville, Mecklenburg Co., Va., 1860. Grad. M. D. Jeff. Med. Col., Phila., 1881. Elec. 1897.

Nottingham, Carlisle Lamar, Cape Charles, Northampton Co., Va.—1.
B. Sea View, Va., Jan. 5, 1884. Grad. Hope Mil. Acad. Grad. M. D. Md. Med. Col. 1905. Brd. Dec., 1905. Elec. 1906.

Nowlin, J. Burton, Richmond, Henrico Co., Va.—3.
B. Lynchburg, Va. Educ. H. Schl. Grad. Col. Phy. and Surg., Balto., 1896. Brd. June, 1896. Elec. 1908.

Nuckolls, Chester B., Hillsville, Carroll Co., Va.—5.
B. Gambetta, Va., 1866. Educ. Wood Lawn Normal Inst. Grad. M. D., Balto. Med. Col. 1893, and Univ. Col. of Med., Richmond, 1894. Brd. April, 1894. Elec. 1895. Present 1898, 1908.

Nuckols, Marvin Everette, Richmond, Henrico Co., Va.—3.
B. Henrico Co., Va., Aug. 2, 1876. Educ. Rich. H. Sch. Grad. M. D. Univ. Col. of Med., Richmond, April, 1897. Brd. June, 1896. Elec. 1898. Mem. Rich. Acad. Med. and Surg. For. Lec. Med. Jur. and Clin. Asst. to Chair Clin. Med., Univ. Col. Med., Richmond. Surg. Rich. City Almshouse 1897-8.

O'brien, Jr., John, Rend, Fayette Co., W. Va.
B. Manchester, Va., Nov. 19, 1876. Educ. Manchester H. Sch., Ph. D. Med. Col. Va. 1898. Grad. M. D. Med. Col. Va. 1901. Brd. Va. June, 1901, of W. Va. 1902. Elec. 1901. Mem. Am. Med. Assn.

O'Brien, Mathew Watson, Alexandria, Alexandria Co, Va.—8.
B. Balto., Md., May 6, 1855. Educ. St. John's Acad., Alexandria. Grad. M. D. Ohio Med. Col. 1876. Elec. 1885. Present 1886, 8, 1890, 2, 3, 4. Legis. Com. about Carrying Dead Bodies on R. R., 1890. Mem. Am. Med. Assn.; of So. Surg. and Gyn. Assn.; of Am. Assn. for Adv. of Sci.; of Nat. Assn. R. R. Surg.; Med. Soc., Alex., Va. Local Surg. So. R. R.; Dist. Surg. C. & O. R. R. Papers, Injuries of Knee-Joint, 1892.

O'Hara, Robert Gildea, Bedford City, Bedford Co., Va.—6.
Grad. M. D. Col. Phys. and Surg., Balto., 1885. Elec. 1885.

Old, Herbert, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., Oct. 14, 1871. Educ. Univ. of Va. Grad. M. D. Univ. of Va. 1895. Brd. 1895. Elec. 1898. Present 1898, 1908. Mem. Sea. Med. Soc. Papers, Interruption of Pregnancy, 1898.

Old, William Levi, Norfolk, Norfolk Co., Va.—2.
B. A. Randolph-Macon Col. 1892. Grad. M. D. Univ. of Va. 1894. Brd. 1896. Elec. 1901.

Oldham, Maryus Curtis, Lancaster, Lancaster Co., Va.—1.
Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1904.

Olhausen, Frank B., Harrisonburg, Rockingham Co., Va.—1.
B. Mahanoy Plane, Pa., Feb. 29, 1876. Educ. Harrisonburg H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec.

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1904. Mem. Rockingham Co. Med. Soc. Local Surg. B. & O. and So. Ry. Cos.

Oppenheimer, St. Julien, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1893. Brd. April, 1893. Elec. 1893. Present 1894, 1908.

Oppenhimer, W. T., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1881. Elec. 1886. Pres. Rich. Brd. of Hlth. Mem. (and Pres. 1900) Rich. Acad. of Med. and Surg.

Osborne, Andrew Jefferson, Lawrenceville, Brunswick Co., Va.—4.
B. Lawrenceville, Va., 1869. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1899. Brd. June, 1899. Elec. 1901. Mem. Soc. Al. Med. Col. Va. Phys. to Co. (Brunswick) Almshouse.

Osborne, Archibald P., Berryville, Clarke Co., Va.—7.
Grad. M. D. Univ. Col. Med., Richmond, Va., 1899. Brd. June, 1899. Elec. 1904.

Osborne, Joseph Dunn, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Univ. of Va. 1895. Brd. fall 1895. Elec. 1904.

Osterhaus, Karl, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., March 7, 1881. Educ. H. Sch. and St. John's Col., Annapolis, Md. Grad. M. D. Univ. of Va. 1903. Brd. Dec., 1906. Elec. 1907. Mem. Norfolk Med. Soc.; of Amer. Med. Assn. Int. Univ. of Bonn Hosp., Ger., 1903, 4; Mt. Sinai Hosp., N. Y. City, 1904, 5; Hosp. for Crippled Children, Balto., Md., 1905, 6. Spec. in Orthop. Surg.

Owen, John Atkinson, Turbeville, Halifax Co., Va.—6.
B. Turbeville, Va., Aug. 15, 1880. A. B. of Hampden-Sidney Col. Grad. M. D. Univ. of Va. 1903. Brd. June, 1903. Elec. 1904.

Page, Hugh Nelson, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., 1882. Educ. Univ. of Va. 1908. Brd. June, 1908. Elec. 1908. Mem. Norfolk Med. Soc.

Page, Robert Lee, Batesville, Albemarle Co., Va.—7.
Grad. M. D. Bellevue Hosp. Med. Col. 1884. Elec. 1885.

Page, R. P., Berryville, Clarke Co., Va.—7.
Grad. M. D. Univ. Va. 1859. Elec. 1882.

Painter, George Grattan, Pulaski, Pulaski Co., Va.—9.
B. Giles Co., Va., June 10, 1857. Educ. Draper's Valley Acad. B. A. King's Col. Grad. M. D. Col. Phys. and Surg., Balto., 1883. Elec. 1889. Present 1889, 1892. Mem. Wythe Co. Med. Soc.

Painter, Margaret Verzelia, Marion, Smyth Co., Va.—9.
B. Salem, Va., May 31, 1880. A. B. Roanoke Col. Grad. M. D. Woman's Med. Col. of Pa. 1903. Brd. Dec., 1903. Elec. 1904. Mem. Roa. Co. Med. Soc.

Painter, William Graham, Big Stone Gap, Wise Co., Va.—9.
B. Draper's Valley, Va., Nov. 16, 1875. Educ. Va. Poly. Inst. Grad. M. D. Med. Col. Va., 1901. Brd. June, 1901. Elec. 1904. Mem. S. W. Va. Med. Assn.; of Wise Co. Med. Assn.

Painter, William Isaac, Tazewell, Tazewell Co., Va.—9.
B. Knob, Tazewell Co., Va., May 11, 1870. Educ. Priv. Sch. and Wash. and Lee Univ. Grad. M. D. Jeff. Med. Col. May, 1894. Brd. June, 1899. Elec. 1899. Present 1901, 3. Mem. and Treas. Tazewell Med. Soc. Phy. to Tazewell Co. Jail and Almshouse.

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Palmer, Alfred Copeland, Richmond, Henrico Co., Va.—3.
B. Middlesex Co., Va., July 28, 1857. Educ. Loc. Sch. Grad. M. D. Univ. of Md. 1881. Elec. 1883. Present 1885, 7, 8, 9, 1890, 4, 7, 8, 1908. V.-Pres. 1889. Ex-Mem. Med. Ex. Brd. Va. Papers, Report on Ophthalmology, 1888; Palpotraction, 1890.

Parham, Marvin Dribbel, Church Road, Dinwiddie Co., Va.—4.
Grad. M. D. Med. Col. Va. 1860. Elec. 1906.

Parker, Edward M., Emporia, Greenesville Co., Va.—4.
B. Courtland, Va., 1865. Grad. M. D. Md. Med. Col., Balto., 1901. Brd. June, 1901. Elec. 1901. Odd-Fellow.

Parker, James Russell, Providence Forge, New Kent Co., Va.—3.
B. Franklin Co., Va., Nov. 20, 1880. Educ. Randolph-Macon Acad. Trained nurse N. Y. City Hosp. Grad. M. D. Med. Col. Va. 1906. Brd. 1906. Elec. 1906.

Parker, Joseph Henry, Dendron, Surry Co., Va.—4.
B. Surry Co., Va., March 19, 1875. Educ. Norfolk Sch. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904.

Parker, Rea, Petersburg, Dinwiddie Co., Va.—4.
B. Como, Hertford Co., N. C., Oct. 23, 1879. Educ. Agric. and Mech. Col. Univ. N. C., and Ph. B. Univ. Col. Med. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908.

Parker, Richard Henry, Portsmouth, Norfolk Co., Va.—2.
Grad. M. D. Univ. of Pa. 1858. Elec. 1904.

Parker Truman Alfred, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Oct. 19, 1874. A. B. of Hampden-Sidney Col. Grad. M. D. Univ. Col. of Med. 1899. Brd. June, 1902. Elec. 1902. Mem. Al. Assn. Univ. Col. Med. Asst. to Chairs, Clin. Med., and Physiol., Univ. Col. of Med.

Parker, William Henry, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Sept. 16, 1873. Educ. Richmond Col. Grad. M. D. Univ. Col. of Med., Richmond, 1895. Brd. 1894. Elec. 1899. Present 1899, 1908 Mem. Richmond Acad. Med. and Surg. Adj. Prof. Genito-Urin. Dis. and Syph. Univ. Col. of Med. Med. Dir. Chim. Hosp. Papers, Path. and Treat. of Hemorrhoids, 1897; Reflexes of Stricture and Ext. Perineal Section.

Parkins, Thomas M., Staunton, Augusta Co., Va.—10.
Grad. M. D. Col. P. and S., Balto., April, 1894. Brd. April. 1894. Elec. 1894. Present 1894.

Parrish, Charles T., Portsmouth, Norfolk Co., Va.—2.
Grad. M. D. Colum. Med. Col. N. Y. 1890. Brd. 1890. Elec. 1894.

Parrish, William P., Chatham, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Sept. 2, 1866. Grad. M. D. Balto. Med. Col. 1891. Brd. Sept., 1892. Elec. 1898. Present 1898.

Patterson, William, Staunton, Augusta Co., Va.—10.
B. New Hope, Aug. Co., Va., August 18, 1883. Grad. M. D. Univ. Va. 1907. Elec. 1908. Mem. Aug. Co. Med. Soc.

Payne, Marshall J., Staunton, Augusta Co., Va.—10.
Grad. M. D. Jeff. Med. Col. May 2, 1893. Brd. Oct. 1893. Elec. 1894. Present 1894, 1908. Councilor 10th Dist. 1908-9.

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Payne, Robert J., Fredericksburg, Spotsylvania Co., Va.—1.
B. Orlean, Va. Educ. Locust Dale Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Present 1899, 1908.

Payne, Robert Lee, Norfolk, Norfolk Co., Va.—2.
B. Lexington, Davidson Co., N. C., March 28, 1857. Grad. Spec. Sch. Univ. N. C. Grad. M. D. Jeff. Med. Col., Phila., 1881. Brd. June, 1896. Elec. 1897. Present 1898. Mem. N. C. Med. Soc.; Wilson Acad. of Med.; Loc. Surg. So. R. R., and of Nat. Assn. R. R. Surg. Ex-Pres. N. C. Med. Soc. Ex-Mem. N. C. Brd. Med. Ex. Ex-Supt. Brd. Hlth., Davidson Co.

Payne, Jr., Robert Lee, Norfolk, Norfolk Co., Va.—2.
B. Lexington, N. C., 1882. Educ. Univ. of N. C. Grad. M. D. Univ. of Pa. 1905. Brd. June, 1905. Elec. 1908. Mem. Am. Med. Assn.; Sea. Med. Assn.; Norfolk Med. Soc.; Asst. Gyn. St. Vincent's Hosp. Papers, Massive Dosage in Treat. of Pneumonia, 1907. Uretero-Vesical Implantation—New Method of Anastomosis, 1908.

Payne, Wilbur B., Covington, Alleghany Co., Va.—10.
B. Alleghany Co., Va., Dec., 1867. Educ. Pub. and Priv. Sch. Grad. M. D. Univ. of Va. 1892 and Tulane Univ., La., 1893. Brd Oct., 1892. Elec. 1893. Present 1892, 7, 9, 1908. Loc. Surg. C. and O. Ry.; Secy. Alleghany Co. Brd. Hlth.; Med. Ex. Equit., N. Y. Mut., Penn. Mut., Mass. Mut., Mut. Ben. of N. Y., Etna, and Home L. Ins. Cos. Papers, Treat. and Prevention of Scarlet Fever; Treat. of Burns.

Pearson, M. M., Bristol, Washington Co., Va.—9.
B. Rotherwood, Tenn., 1863. Grad. M. D. Hosp. Col. Med., Louisville, Ky., 1889. Brd. 1901. Elec. 1903. Mem. Bristol Med. Soc. (and Pres. 1903-4); of S. W. Va. Med. Soc.

Pedigo, Lewis Gravely, Roanoke, Roanoke Co., Va.—6.
B. Hanover Co., Va., Jan. 23, 1858. A. B. 1876, and M. A. 1881 Roanoke Col., Va. Grad. M. D. Univ. City N. Y. 1880. Elec. 1885. Att. Sess. nearly all since. Res. Phys. Arsenic Lith. Spgs., Shawsville, Va.; Phy. in charge Crockett Sanit. Mem. Am. Med. Assn.

Peery, Emory Willis, Rural Retreat, Wythe Co., Va.—9.
B. Burke's Garden, Va., Sept. 1, 1866. Educ. Burke's Garden Acad. Grad. M. D. Univ. Md. Med. Col. 1891. Brd. April, 1891. Elec. 1901.

Peery, Thomas Edward, Bluefield, Mercer Co., W. Va.—
B. Tazewell Co., Va., Nov. 1, 1873. Educ. Roanoke Col. and Univ. Ky. Grad. M. D. Col. Phy. and Surg., Balto., 1895. Brd. May, 1895. Elec. 1908. Mem. Mercer Co., W. Va., Med. Soc.; of Am. Med. Assn.; of N. & W. Ry. Soc. of Surgs.; Int. Manhattan Eye and Ear Hosp. 1896; N. Y. Eye and Ear Inf. 1897; Ocul., N. & W. Ry. Co.

Peirce, Chichester T., Litwalton, Lancaster Co., Va.—1.
B. Lancaster Co., Va., Nov., 1877. Educ. Aberdeen Acad. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1902.

Peirce, David E., Boon's Path, Lee Co., Va.—9.
B. Wythe Co., Va., 1868. Educ. Wytheville Mil. Acad. Stud. Med. Jeff. Med. Col. Grad. M. D. Univ. of South, 1904. Brd. Dec., 1904. Elec. 1906. Mem. S. W. Va. Med. Soc.; of Med. and Surg Soc. of South.

Peirce, Isaac, Tazewell, Tazewell Co., Va.—9.
Grad. M. D. Jeff. Med. Col., Phila., 1886. Brd. April, 1888. Elec. 1904.

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Pendleton, Edmund S., Iron Gate, Alleghany Co., Va.—10.
Grad. M. D. Jeff. Med. Col. 1854. Elec. 1888.

Pendleton, Eugene, Cuckoo, Louisa Co., Va.—8.
Grad. M. D. Univ. of Md. 1871. Elec. 1904.

Peple, William Lowndes, Richmond, Henrico Co., Va.—3.
B. Manchester, Va., Dec. 5, 1875. Educ. Rich. H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. June, 1897. Elec. 1898.

Perkins, Jr., Edward Williamson, R. F. D., Petersburg, Dinwiddie Co., Va.—4.
B. Reams, Va., 1877. Grad. M. D. Univ. of South, Sewanee, Tenn., 1903. Brd. June, 1905. Elec. 1905. Present 1905. Post-Grad. work Univ. Col. Med., Rich., and Med. Col. Va. 1905. Coroner Dinwiddie Co.

Perkins, John Russell, Spencer, Henry Co., Va.—5.
B. Stuart, Va., Feb. 24, 1880. Grad. of Danville Mil. Inst. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1905. Mem. Patrick-Henry Med. Soc. Ex-Res. Phy. City (Richmond) Hosp. Loc. Surg. Danville and West. Ry. Papers, Tetanus, 1905.

Perrow, Ferdinand Mitchell, Lynchburg, Campbell Co., Va.—6.
B. Theta, Campbell Co., Va., March 1, 1874. Grad. Lynchburg. H. Sch. Grad. M. D. Univ. Va. 1902. Univ. Pa. 1905. Brd. Dec., 1906. Elec. 1908. Mem. Lynch. Acad. Med. Alpha Omega, Alpha Hon. Med. Frat. Res. Phy. Germantown Hosp., Phila., 1905, 6. Externe N. Y. Lying-in-Hosp. 1906. Papers, Diag. and Treat. of Tubercular Peritonitis, 1908; Treat. of Abortions, 1908.

Pettet, James Alfred, Roseland, Nelson Co., Va.—10.
Grad. M. D. Univ. Va. 1896. Brd. 1896. Elec. 1897.

Pettet, William Beverley, New Canton, Buckingham Co., Va.—10.
B. Fluvanna Co., Va., July 22, 1858. Educ. Va. Mil. Inst. Grad. M. D. Univ. Md. 1883. Elec. 1885. Present 1885, 9, 1908. Mem. Nat. Assn. Ry. Surg.; Loc. Surg. C. & O. Ry. Co.

Peyser, Mark Wallace, Richmond, Henrico Co., Va.—8.
B. Washington, D. C., July 8, 1870. Educ. H. Sch., Petersburg, Va. Grad. M. D. Univ. Va. 1890. Brd. April, 1891. Elec. 1891. Present 1894, 5, 7, 8, 9, 1901, 5, 7, 8. Mem. Com. on Nom. of App. for Mem. 1897-1908. Mem. (Secy. and Reporter) Rich. Acad. Med. and Surg.; of Church Hill Med. Soc.; Lect. on Med., Phys. and Dem. of Chem. Univ. Col. of Med., Richmond; Electrol. and Radiol. to Retreat for Sick.

Peyton, Charles E. C., Pulaski, Pulaski Co., Va.—9.
B. Charlottesville, Va., Jan. 5, 1854. Stud. Med. Univ. Va. Grad. M. D. Univ. N. Y. 1876. Elec. 1881. Ex-Mem. Med. Ex. Brd. Va. Surg. N. & W. R. R. Surg. 2d Reg. Va. Vols. Surg. Bertha Zinc and Min. Co., and Dora Green Furnace.

Pharr, D. C., Gap Mills, Monroe Co., W. Va.
B. Covington, Va., Oct. 15, 1845. Educ. Hampden-Sidney Col., Va. Grad. M. D. Med. Col. Va. 1879. Elec. 1879. Present 1881.

Pharr, James Robertson, Dunloop, Fayette Co., W. Va.
B. Simmonsville, Va., July 17, 1880. Educ. Fairview Acad. and Roanoke Col. Grad. M. D. Med. Col. Va. 1903. Brd. Va. June, 1903; of W. Va. April, 1904. Elec. 1906. Med. Ex. Prud. and John Hancock Ins. Cos.

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Phelps, Wilbur Moorhead, The Iroquois, Washington, D. C.
B. Laurel, Md., July 8, 1877. Educ. Wash. Pub. Sch. and Col. Battle Creek, Mich. Grad. M. D. Howard Univ. Med. Dept. 1898, and Columbian Univ., D. C., 1903. Brd. Va. June, 1899, and Brd. Med. Supervisors, D. C., July, 1902. Elec. 1899. Phy. Battle Creek, Mich., Sanit. 1898, 9. Asst. Res. Phy. Emer. Hosp., D. C., 1902. Mem. Geo. Wash. Univ. Al. Soc. Prof. Chem., Atlantic Med. Col. Balto., Md.

Phillips, Henry Woodfin, Gilmerton, Norfolk Co., Va.—2.
B. Norfolk, Va., Oct. 10, 1875. Educ. Va. Poly. Inst. and R. H. Col., Md. Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. June, 1897. Elec. 1902. Mem. Am. Med. Assn.

Phillips, John E., Suffolk, Nansemond Co., Va.—2.
B. Isle of Wight Co., Va., Sept. 16, 1856. Educ. Va. Poly. Inst., Blacksburg, Va. Grad. M. D. Col. Phys. and Surg., Balto., 1880. Elec. 1898. Present 1898. Mem. and Secy. Sea. Med. Assn.

Phillips, Walter S., Rapidan, Culpeper Co., Va.—8.
B. Ellicott City, Md., July 5, 1869. A. B. of St. John's Col., Annapolis, Md. Grad. M. D. Univ. of Md., Balto., 1897. Brd. Dec., 1900. Elec. 1904. Mem. Pied. Med. Soc.

Phipps, John M., Rural Retreat, Wythe Co., Va.—9.
B. in Grayson Co., Va., June 26, 1865. Educ. Pub. Schls. Grad. M. D. Med. Col. Va. 1887. Brd. 1887. Elec. 1904. Att Sess two.

Phlegar, Orrin K., Crandon, Bland Co., Va.—9.
B. Dublin, Va., May 5, 1876. Grad. M. D. Univ. Col. of Med., Richmond, 1906. Brd. June, 1906. Elec. 1907.

Pilout, Joseph A., Sutherland, Dinwiddie Co., Va.—4.
B. Richmond, Va., May 25, 1875. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1903.

Pine, John S., Lebanon Church, Shenandoah Co., Va.—7.
B. 1875. Educ. Nat. Nor. Univ., Lebanon, O. Grad. M. D. Univ. Col. of Med., Richmond, 1901. Brd. Va. June, 1901, and of W. Va. 1903. Elec. 1906. Present 1906.

Pinkerton, William Alfred, Alberene, Albemarle Co., Va.—7.
B. Nelson Co., Va., March 9, 1877. Grad. of Cove Acad., W. Va. Grad. M. D. Univ. Va. 1900. Brd. June, 1902. Elec. 1904. Mem. Pied. Med. Soc. H. Surg. Bayonne Hosp,, N. Y.

Pitt, Cullen S., Richmond, Henrico Co., Va.—3.
B. Richmond, Va., 1881. M. A. Richmond Col. 1901. Grad. M. D. Univ. Col. Med., Rich., 1905. Brd. June, 1905. Elec. 1908. Present 1908. Mem. Rich. Acad. Med. and Surg. Res. Phy. Rich. City Hosp. 1905, 6. Inst. in Phys. Univ. Col. Med.

Plaster, Henry Garnett, Bluemont, Loudoun Co., Va.—8.
B. Snickersville, Va., June 28, 1879. Educ. Pub. Sch. and priv tutors. Grad. M. D. Univ. Col. of Med., Richmond, 1899. Brd. June, 1899. Elec. 1899.

Plecker, W. A., Hampton, Elizabeth City Co., Va.—1.
B. Augusta Co., Va., April 2, 1861. Educ. Staunton, Va., Male Acad., Univ. Va. Grad. M. D. Univ. Md. 1885. Brd. Va. 1885, and of Ala. 1887. Elec. 1891. Present 1891-8, 1902-5. Exam. Surg. U. S. Pen.

Pole, Edgar A., Hot Springs, Bath Co., Va.—10.
B. Hot Springs, Va., May 17, 1870. Educ. Roanoke Col., Salem, Va. Grad. M. D. Balto. Med. Col. 1897. Brd. Sept. 1897. Elec. 1898.

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Exam. Penn. Mut. L. Ins. Co. Mem. Am. Med. Assn. Papers, Value of Auscultation in Diagnosis of Fetal Positions, Neurasthenia.

Pole, Henry Steir, Hot Springs, Bath Co., Va.—10.
B. Balto., Md., Feb. 23, 1847. Grad. M. D. Col. Phys. and Surg., Balto., 1880. Elec. 1890. Res. Phys. Hot Springs. Mem. Am. Med. Assn.

Pole, Lanier Dunn, Hot Springs, Bath Co., Va.—10.
B. Hot Springs, Va., 1884. Educ. Augusta Mil. Acad. Grad. M. D. Univ. Col. Med., Richmond, 1906. Brd. June, 1906. Elec. 1906. Res. Phy. Retreat for Sick, Rich., 1906, 7.

Pollard, John A., Wades, Bedford Co., Va.—6.
B. Wades, Va., 1873. A. B. of N. L. Acad. Grad. M. D. Univ. of Louisville, Ky., 1894. Brd. spring, 1894. Elec. 1904. Mem. Bedford Co. Med. Soc.

Pollard, William Oscar, Speers Ferry, Scott Co., Va.—9.
B. Henrico Co., Va., January 31, 1877. Grad. Rich. H. Schl. Grad. M. D. Med. Col. Va. 1904. Brd. Va. June, 1904; of W. Va. Nov., 1904. Elec. 1904.

Pope, Benjamin Ashby, Newsoms, Southampton Co., Va.—2.
B. Newsoms, Va., Aug. 10, 1875. Educ. Va. Poly. Inst., and A. and M. Col. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1898. Elec. 1898. Mem. Al. Med. Col. Va.

Porter, Harry William, Louisa, Louisa Co., Va.—8.
B. Louisa, Va., March 28, 1874. Educ. H. Sch. and Louisa Male Acad. Grad. M. D. Univ. of Va. 1896. Brd. 1897. Elec. 1898. Present 1898.

Powell, Eugene C., McKenney, Dinwiddie Co., Va. Res. Hon. Mem.—4.
B. Dinwiddie Co., Va., Jan. 1, 1840. Educ. Randolph-Macon Col. Grad. M. D. Univ. City of N. Y. 1861. Elec. 1893. Hon. Mem. 1906. Hosp. Steward and Act. Asst. Surg. C. S. A. Mem House of Del. 1875, 7. Supt. Dinwiddie Co. Sch. for last twelve years. Med. Ex. for Equit., N. W. Mut., Mut. Ben., Mass. Mut., Ger. and N. Y. L. Ins. Cos.

Powell, Lawson Otwood, Crab Neck, York Co., Va.—1.
B. Dare, Va., Oct. 9, 1875. Educ. Chesapeake Acad. and Wm. and Mary Col. Grad. M. D. Md. Med. Col. 1903. Brd. June, 1905. Elec. 1905.

Powell, Llewellyn, Alexandria, Alexandria Co., Va.—8.
B. Alexandria, Va., Dec. 17, 1878. Grad. Va. Mil. Inst. 1899. Grad. M. D. Med. Dept. Columbian Univ. 1904. Brd. Dec., 1904. Elec. 1906. Mem. Fairfax Co. Med. Soc.; of Med. Soc. N. Va. Att. Phy. Alex. Hosp. Papers, Acute Gastro-Enteric Infection, 1906.

Powell, Oscar Littleton, Onancock, Accomac Co., Va.—1.
B. Onancock, Va., Jan. 19, 1875. Educ. Margaret and Onancock Acads. and Harvard Univ. Grad. M. D. Jeff. Med. Col. 1900. Brd. Dec., 1901. Elec. 1902. Mem. Davis Obstet. Soc. of Jeff. Med. Col.

Powell, Richard Addison, 1012 Thirteenth Street, N. W., Washington, D. C.
B. Brunswick Co., Va., 1884. A. B. Randolph-Macon Col. 1903. Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1908. Mem. S. W. Va. Med. Soc. H. Surg. St. Luke's Hosp., Richmond, 1907, 8. Surg. to Va. and S. W. Ry.

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Powell, Robert Simmons, Woodview, Brunswick Co., Va.—4.
B. Brunswick Co., Va., Oct. 23, 1834. Educ. Holly Grove Acad. and Emory and Henry Col. Grad. M. D. Univ. Va. 1857. Elec. 1872. Att. Sess. several. Served three sess. in Legis. of Va.

Powell, William Claiborne, Petersburg, Dinwiddie Co., Va.—4.
B. Dinwiddie Co., Va., Aug. 23, 1870. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1901. Brd. Dec., 1901. Elec. 1904. Present 1904, 8. Mem. Al. Soc. Med. Col. Va.; Southside Va. Med. Assn.; Petersburg Med. Fac.; Exam. for N. Y. Mut., Phila. L. Ins. Cos.; Mod. Woodmen of Am. and Woodmen of World. Hon. Mem. Chesterfield Co. Med. Soc. Papers, Monstrosity, 1904.

Powers, Emory Byron, Renan, Pittsylvania Co., Va.—5.
B. White Post, Clarke Co., Va., Nov. 5, 1878. Educ. White Post Gra. Sch. and Va. Poly. Inst. Grad. Ph. D. (1903) and M. D. 1904 Univ. of South. Brd. June, 1904. Elec. 1904. Mem. John S. Cain Med. and Surg. Soc.; Exam. N. Y. Mut. and Penn. Mut. L. Ins. Cos

Preston, George M., Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Univ. of Va. 1881. Elec. 1901.

Preston, John W., Roanoke, Roanoke Co., Va.
B. Glade Hill, Va., Dec. 13, 1867. Educ. Milligan, Tenn. Grad. M. D. Col. P. and S., Balt., 1893. Brd. April, 1893. Elec. 1893. Present 1894. Post-Grad. N. Y. Poly. 1898, Univ. Pa. 1904, 5. Mem. Am. Med. Assn.; of W. Va. St. Med. Assn. Papers, Tuberculosis among Mountains of Southern W. Va.; Appendicitis from the Standpoint of General Practitioner.

Preston, Robert Rolen, Glade Spring, Washington Co., Va.—9.
Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904.

Preston, Samuel P., Lynchburg, Campbell Co., Va.—6.
B. Bedford Co., Va., July 5, 1866. Grad. Lynchburg H. Sch., B. A. Hampden-Sidney Co. Grad. M. D. Univ. Va. 1886, Jeff. Med. Col. 1887. Brd. April, 1893. Elec. 1893. Mem. Lynch. Acad. of Med. Res. Phys. Blockley Hosp., Phila., 15 mos. Stud. in Vienna, Kraulsenham, under Koch in Berlin, Carl Ludwig, Prof. Phy., Edmund Drechsel, Prof. Phy. Chem., Leipsig, and Charcot, Saltpetriere, Paris.

Pretlow, Robert Henley, Suffolk, Nansemond Co., Va.—2.
B. Southampton Co., Va., 1871. Grad. M. D. Univ. of N. Y. City 1894. Brd. Dec., 1899. Elec. 1905.

Pretlow, Thomas Garrett, Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. 1903. Elec. 1904.

Pretlow, Thomas Jefferson, Newport News, Warwick Co., Va.—1.
B. Southampton Co., Va., Oct. 14, 1882. Educ. Frank. Male Acad. and Randolph-Macon Acad. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1908. Present 1908. Secy. and Treas. Newport News Med. Soc. Exam. N. Y. L., Eastern L. Assur. So. of Va.; Mem. Am. Med. Assn. Papers, Menopause, 1908; Foetal Syphilis, 1907.

Price, J. Willis, Riceville, Pittsylvania Co., Va.—5.
Educ. Crowley Acad., Prospect, Va., Hampden-Sidney Col. and Va. Mil. Inst. Grad M. D. Col. Phys. and Surg., Balt., Md., 1876. Elec. 1884. Sen. Res. Phy. Bayview Hosp. 1876, 7. Post-Grad. Univ. Col. Med., Rich., 1900, 1, and N. Y. Poly., 1904. Med. Exam. N. Y., N. Y. Equit. Mut. Ben., Can. Sunlight L. Ins. Cos.

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Price, Joseph, 241 18th Street, Philadelphia, Pa. Non-Res. Hon. Mem.
B. Rockingham Co., Va., Jan. 1, 1853. A. M. Union Col., N. Y. Grad. M. D. Univ. Pa., 1877. Elec. Hon. Mem. 1892. Present 1890, 2, 1901, 2, 4. Mem. Am. Med. Assn.; of Brit. Gyn. Assn.; of Edin. Obs. Soc.; of Am. Assn. Gyn. and Obs.; of Phila. Obs. Soc.; of Phila. Co. Med. Soc.; of Med. Soc. State of Pa. Contrib. Prize $100 to Soc. 1893-5; raised to $200 1897, for best Essay on "Hist. Med. and Surg. in Va."

Price, Lawrence Tayloe, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1903. Brd. Dec., 1903. Elec. 1904. Present 1908.

Price, Samuel Davies, Montvale, Bedford Co., Va.
B. Montvale, Bedford Co., Va., May 28, 1877. Educ. Montvale Acad. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905. House Staff Mem. Hosp., Richmond, Va., 1905.

Price, Samuel Hutchings, Montvale, Bedford Co., Va.—6.
B. Bedford Co., Va., Jan. 25, 1852. Grad. M. D. Univ. Va. 1874. Bellevue Hosp. Med. Col., N. Y., 1876. Elec. 1876. Resigned 1880. Re-elect. 1891. Present 1891.

Priddy, Albert Sidney, Keysville, Charlotte Co., Va.—6.
B. Lunenburg Co., Va., Dec. 7, 1865. Educ. Keysville H. Sch. Grad. M. D. Col. Phys. and Surg., Balt., 1886. Brd. April, 1886. Elec. 1886. Present 1887, 9, 1893, 4, 5, 6, 8, 9, 1901, 3, 4, 5, 2d V.-Pres. 1895; Mem. Med. Ex. Brd. Va. 1893-1909; H. of Del. from Charlotte Co., 3 terms; So. W. Va. Med. Soc.; E. Tenn. Med. Soc. 1st Asst. Phy. S. W. St. Hosp. 1901-3, resigned. Supt. same 1906-8, resigned.

Prince, William Daniel, Stony Creek, Sussex Co., Va.—4.
B. Sussex Co., June 28, 1872. Educ. Warrenton Male Acad. and Richmond Col. Grad. M. D. Univ. of Va. 1895. Brd. Sept., 1895. Elec. 1899.

Pritchett, Charles W., Danville, Pittsylvania Co., Va.—5.
B. Mt. Cross, Va., July 1, 1864. Grad. M. D. Col. Phys. and Surg., Balt., 1886. Brd. 1886. Elec. 1886. Present 1889, 1894, 8, 1908. Rep. on Adv. in Obstet. 1889.

Proctor, John Peebles, Athens, Clark Co., Ga.
B. Drake's Branch, Va. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1903. Res. Phys. St. Luke's Hosp., Richmond, 1903, 5.

Purdy, James Jarratt, R. F. D. 2, Mineral, Louisa Co., Va.—8.
B. Greenesville Co., Va., Sept. 29, 1876. Educ. T. P. McQueen's Sch., Sumpter, S. C. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1900. Mem. Al. Soc. Med. Col. Va. Surg. Sulphur Mining and R. R. Co. Med. Ex. N. Y. Mut., and Trav. L. Ins. Cos.

Quaintance, Oscar R., Slate Mills, Rappahannock Co., Va.—7.
B. near Slate Mills, Va., 1850. Educ. Madison Acad. Va. Grad. M. D. Univ. of Pa. 1873. Elec. 1906. Present 1906.

Quick, Tunis C., Falls Church, Fairfax Co., Va.—8.
B. Ashburn, Va., Jan. 27, 1871. Grad. Columbia Univ. Prep. Sch. Grad. M. D. Columbian (now Geo. Wash.) Univ., D. C., 1895. Brd. June, 1896. Elec. 1901. Present 1901, 2, 4, 5, 7, 8. V.-Pres. 1905, 6. Councilor 1908, 9. Mem. Fairfax Co., Geo. Wash., N. Va. Med. Socs.; of Am. Med. Assn.; Surg. Camp Alger, Span.-Amer. War; Hlth. Off. Falls Church 1898-1902.

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Ragland, Jr., John F., Drewry's Bluff, Chesterfield Co., Va.—3.
Grad. M. D. Med. Col. Va. 1899. Brd. June, 1901. Elec. 1904.

Raiford, Rufus L., Conley, Southampton Co., Va.—2.
B. Southampton Co., Va., Nov. 17, 1880. Educ. Corinth Acad., Conley, Va., and Grad. Westtown Brd. Sch., Westtown, Pa. Grad. M. D. Univ. Col. Med., Richmond, 1906. Brd. June, 1906. Elec. 1907. Present 1907, 8. Mem. Southside Va. Med. Assn.; Phy. Corinth Acad.; Pres. Y. M. C. A. Univ. Col. of Med. 1905, 6.

Raines, Thomas Morton, Wakefield, Sussex Co., Va.—4.
B. Mecklenburg Co., Va., April 12, 1873. Educ. Boydton H. Sch., Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1907. Brd. Dec., 1907. Elec. 1908. Mem. Southside Va. Med. Assn. Papers, Cerebro-Spinal Meningitis, Case Complicating Typhoid Fever.

Rains, Charles Marion, Bohannon, Mathews Co., Va.—1.
Grad. M. D. Col. Phy. and Surg., Balt., 1877. Elec. 1899.

Ramsey, Alvah, Burkeville, Nottoway Co., Va.—4.
B. Pittsville, Pittsylvania Co., Va., Nov. 20, 1875. Educ. Stuart Nor. Col. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899.

Ramsey, Edwin Benjamin, McClelland, Isle of Wight Co., Va.—2.
B. McClelland, Va., 1870. Educ. Wm. and Mary Col. Grad. M. D. Univ. of Md. 1897. Brd. June, 1897. Elec. 1902.

Ramsey, Oscar Lee, Kent's Store, Fluvanna Co., Va.—10.
B. Sandy Level, Pittsylvania Co., Va., Aug., 1874. Educ. Randolph-Macon Acad. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1906.

Ramsey, Reuben Thomas, Elba, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Feb. 21, 1857. Educ. Clifton Acad., Va., and Yadkin Col., N. C. Grad. M. D. Col. Phys. and Surg., Balto., 1879. Elec. 1885. Present 1891, 4, 1908. Loc. Surg. F. & P. R. R.

Randolph, Henry Ward, Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. Col. of Med., Richmond, 1902. Brd. June, 1902. Elec. 1908.

Randolph, John, Arvonia, Buckingham Co., Va.—10.
B. Albemarle Co., Va., June 8, 1855. Grad. Midway H. Sch., Charlottesvilel Inst., N. Y. Inst. of Sci., Cent. Univ., Ind., and Chautauqua, Col., A. M. Boston Col.; Stud. Med. Univs. of Va., City of N. Y., N. Y. Poly. and N. Y. Post-Grad. Grad. M. D. Wash. Univ., Balto., 1878, Col. Phy. and Surg., Balto., 1879. Brd. 1890. Elec. 1890. Present 1894, 6, 1900, 4. Mem. Am. Med. Assn., Buch. Co. Med. Soc.

Randolph, Robert Carter, Boyce, Clarke Co., Va.—7.
B. Clarke Co., Va., Nov. 16, 1869. Educ. Linden Acad., Clarke Co. Grad. M. D. Univ. Col. Med., Richmond, 1894. Brd. June, 1896. Elec. 1897. Mem. Richmond Acad. of Med. and Surg. Mem. W. Soc. of Civ. Eng., Chicago, Ill. Ex. Res. Phy. St. Luke's Home, Va. Hosp., Richmond. Adj. Prof. Prin. of Surg., Univ. Col. of Med., Richmond.

Randolph, William Mann, Charlottesville, Albemarle Co., Va.—7.
Grad. M. D. Univ. of Va. 1890. Brd. Sept., 1890. Elec. 1893. Present 1894.

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Rangeley, Walter Were, Christiansburg, Montgomery Co., Va.
B. Stuart, Va., 1868. Grad. M. D. Univ. of Md. April, 1896. Brd. May, 1895. Elec. 1901. Surg. N. and W. R. R.; Phy. to Co. Jail; Mem. Brd. of Hlth.

Rawles, Benjamin W., Richmond, Henrico Co., Va.—3.
B. Nansemond Co., April 19, 1870. Educ. Bethel Acad., Warrenton Springs, Va. Grad. M. D. Med. Col. Va. April, 1897. Brd. June, 1897. Elec. 1899. Present 1899, 1908. Mem. Rich. Acad. Med. and Surg. Adj. Prof. Dis. Children Med. Col. Va.

Rawlings, James Bassett, Staunton, Augusta Co., Va.—10.
B. Brunswick Co., Va., Oct. 12, 1866. Educ. Randolph-Macon Col. Grad. M. D. Med. Col. Va. 1889. Brd. April, 1889. Elec. 1890.

Rawlings, James Henry, Lynchburg, Campbell Co., Va.—6.
B. Charlottesville, Va., June 7, 1871. Educ. Hampden-Sidney Col. Grad. M. D. Univ. Va. 1898. Brd. June, 1903. Elec. 1903. Int. U. S. Mar. Hosp., Boston, 1898, 9. Res. Phy. Hosp. for Wom. of Md., Balto., 1899-1900. H. Phys. N. Y. Infant Asy. 1900-1902.

Rawls, David Luther, Suffolk, Nansemond Co., Va.—2.
B. Nansemond Co., 1879. Educ. Elon Col. N. C. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908. Present 1908. Mem. Alpha Kappa Kappa Frat.

Rawls, Gavin, Carrsville, Isle of Wight Co., Va.—2.
B. Carrsville, Va., Aug. 11, 1856. Educ. Rich. Col. Grad. M. D. Med. Col Va. 1876. Elec. 1877. Resigned; Re-elec. 1905. Mem. Co. Brd. of Hlth.

Rawls, Japheth Edward, Suffolk, Nansemond Co., Va.—2.
B. Holyneck, Va., 1875. A. B. Elon Col., N. C., 1896. Grad. M. D. Univ. and Bellevue Hosp. Med. Col. 1899. Brd 1899. Elec. 1901. Mem. Sea. Med. Assn. Phy. and Surg. to Co. (Nansemond) Almshouse; Town Phy. and Surg. to Poor of Suffolk, Va.

Rawls, Julian L., Berkley, Norfolk Co., Va.—2.
B. Carrsville, Va., July 26, 1881. Educ. Franklin Acad. and Rich. Col. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1905. Elec. 1905. Present 1905. Mem. Norfolk Med. Soc.

Ray, Alfred Chambers, Ashland, Hanover Co., Va.—3.
B. Nottoway Co., Va., 1874. A. B. of Randolph-Macon Col. Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. June, 1899. Elec. 1899. Pres. Al. Assn. Univ. Col. Med., Richmond.

Rea, Montie Lewis, Charlottesville, Albemarle Co., Va.—7.
B. Albemarle Co., Va., Dec. 12, 1876. Educ. Rich. Col. Grad. M. D. Univ. of Va. 1900. Brd. June, 1900. Elec. 1906. Present 1906. Mem. Pied. Med. Assn.

Reade, Frank Marshall, Richmond, Henrico Co., Va.—3.
B. Springfield, Mass., Oct. 6, 1863. Educ. Pub. Sch. Springfield, Mass., and Mohawk Acad., N. Y. Grad. M. D. Med. Col. of Va. 1899. Brd. June, 1899. Elec. 1899. Present 1899, 1908. Prof. Phar. Va. Sch. of Phar.

Redd, James T., Churchland, Norfolk Co., Va.—2.
Grad. M. D. Med. Col. Va. April, 1895. Brd. May, 1895. Elec. 1895.

Redd, Paul Eustace, Highland Park, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1895. Brd. April, 1895. Elec. 1904.

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Reese, Emmett Francis, Courtland, Southampton Co., Va.—2.
B. Southampton Co., Va., Sept. 18, 1877. Educ. Randolph-Macon Acad., Bedford City, Va. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Present 1899. Res. Phy. Retreat for Sick, Richmond, 1899-1900. Instr. Sen. Chem. Univ. Col. Med., Richmond.

Reese, William Penn, R. F. D. 1, Taylor's Store, Franklin Co., Va.—5.
Grad. Roanoke Col., Salem, Va., June, 1868. Grad. M. D. Univ. of Pa. 1872. Elec. 1878. Present 1885, 7, 1891.

Renn, George Alley, Norfolk, Norfolk Co., Va.—2.
B. Raleigh, N. C., Oct. 16, 1865. Educ. Lovejoy's Acad. Grad. M. D. Univ. City N. Y. 1889. Brd. June, 1903. Elec. 1906. Mem. Norfolk Med. Soc.; ex-Secy. Raleigh, N. C., Acad. of Med. and Wake Co. (N. C.) Med. Soc.

Rennie, John Gordon, Petersburg, Dinwiddie Co., Va.—4.
B. Henrico Co., Va., Aug. 15, 1874. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Mem. Petersburg Med. Fac., and Al. Assn. Univ. Col. of Med.

Repass, Thomas Wisdom, Boone Mill, Franklin Co., Va.—5.
B. Bland Co. Va., July 10, 1867. A. M. of Roanoke Col., Va. Grad. M. D. Med. Col. Va. 1895. Brd. May, 1895. Elec. 1907.

Revercomb, William McMath, Clifton Forge, Alleghany Co., Va.—10.
B. Highland Co., Va., Sept. 3, 1880. Educ. Pub. Sch., Shenandoah Inst. and Augusta Mil. Acad. Grad. M. D. Med. Col. Va. 1904, and N. Y. Poly. Med. School 1906. Brd. June, 1904. Elec. 1904. Res. Phy. Central State (Va.) Hosp. and St. Mary's Mat. Hosp., Brooklyn, N. Y.; H. Surg. N. Y. Poly. Hosp. 1906.

Reynolds, Alexander, Graham, Tazewell Co., Va.—10.
Grad. M. D. Jeff. Med. Col., Phila., 1855, and Med. Col. Va. 1887. Prac. prior to Brd. Elec. 1908.

Reynolds, Samuel Addison, Vashti, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Nov. 11, 1864. Educ. Pub. Sch. and Va. Poly. Inst. Grad. M. D. Med. Col. Va. 1887. Brd. 1887. Elec. 1901. Present 1900, 1. Consult. Phy. to Co. (Pitts.) Almshouse.

Rhudy, W. W., Speedwell, Wythe Co., Va.—9.
Grad. M. D. Med. Col. Va. 1895. Brd. May, 1895. Elec. 1903.

Ribble, Jr., William H., Wytheville, Wythe Co., Va.—9.
Grad. M. D. Univ. of Va. 1887. Brd. 1887. Elec. 1902. Present 1908.

Rice, Benjamin Alonzo, Forest Depot, Bedford Co., Va.—6.
B. Montvale, Va., Feb. 3, 1879. Educ. H. Sch. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904. Present 1908.

Richardson, Alec. Staurt, O'Keefe, Mingo Co., W. Va.
B. Valley View, Va., Mch. 30, 1872. Educ. Marion H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. Aug., 1900. Elec. 1908. Mem. S. W. Va. Med. Soc., Am. Med. Assn., Surg. N. & W. Ry. to W. M. Ritter and J. S. Walker Lbr. Cos., Cedar Coal Co. Papers, Aneurisms, 1906.

Richardson, Justus Elijah, Leatherwood, Henry Co., Va.—5.
Grad. M. D. Hosp. Col. of Med., Louisville, Ky., 1905. Brd. Dec., 1905. Elec. 1908.

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Richardson, Maurice H., Boston, Suffolk Co., Mass. Non-Res. Hon. Mem.
B. Athol, Mass., Dec. 31, 1851. A. B. (1873) Harvard Med. Sch. Grad. M. D. Harvard Univ. 1877. Elec. Non-Res. Hon. Mem. 1900. Present 1900. Mem. Am. Surg. Assn.; of So. Surg. and Gyn. Assn. Surg. Mass. Gen'l. Hosp. Asst. Prof. Clin. Surg. Harvard Med. Sch. Papers for Soc., Ovarian Tumors With Twisted Pedicle, 1899.

Richardson, Thomas S., Waynesboro, Augusta Co., Va.—10.
B. Alleghany Co., Va., Nov. 10, 1868. Educ. Pub. Sch., Poly. Inst. and Shenandoah Nor. Sch. Grad. M. D. Univ. Col. Med, Richmond, 1899. Brd. June, 1899. Elec. 1900. Present 1900.

Richter, O. F., White Sulphur Springs, Greenbrier Co., W. Va.
B. Sept. 27, 1862. Grad. M. D. Med. Col. Va. 1884. Elec. 1888. Present 1888.

Ricketts, Edwin S., 408 Broadway, Cincinnati, Ohio. Non-Res. Hon. Mem.
Grad. M. D. Miami Med. Col., Ohio, 1877. Elec. Non-Res. Hon. Mem. 1902. Present 1902. Pres. Am. Assn. Obs. and Gyn. 1901, 2. Ex-Pres. Cincinnati Obs. Soc. Mem. Am. Med. Assn.; Am. Assn. of Obs. and Gyn.; Ohio St. Med. Soc.; Cincinnati Acad. of Med.; British Med. Assn.; British Gyn. Soc.; So. Surg. and Gyn. Soc. Hon. Mem. Hempstead Acad. of Med.

Riddick, Claudius James, Suffolk, Nansemond Co., Va.—2.
B. Nansemond Co., Va. Grad. M. D. Bellevue Hosp. Med. Col. 1890. Brd. April, 1890. Elec. 1890. Present 1892, 1908.

Riddick, Samuel A., Smithfield, Isle of Wight Co., Va.—2.
B. Riddicksville, N. C., Jan. 12, 1877. Educ. Wm. and Mary Col. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. Dec., 1901. Elec. 1902. Mem. Sea. Med. Soc.

Ridley, Francis Thomas, Bluefield, Mercer Co., W. Va.
B. Portsmouth, Va., Sept. 20, 1881. Educ. Portsmouth H. Sch. and Norfolk Acad. Grad. M. D. Univ. Va. 1903. Brd. Va. June, 1903; of W. Va. April, 1905. Elec. 1906. Mem. W. Va. St. Med. Assn.

Riley, Philander Chase, Batopilas, Chihuahua, Mex.
B. Montgomery Co., Md., Feb. 6, 1870. Grad. M. D. Columbian (now Geo. Wash.) Univ. 1899. Brd. Dec., 1905. Elec. 1906. Mem. Med. Assn., D. C.

Rinker, Chas. Frederick, Upperville, Fauquier Co., Va.—8.
B. Opequan, Va., Nov. 13, 1868. Educ. Shenan. Val. Acad., Winchester, Va.; Stud. Med. Univ. Va. Grad. M. D. Bellevue Hosp. Med. Col., N. Y., 1883. Brd. 1886. Elec. 1887. Att. Sess. three. Post-Grad. N. Y. Post-Grad. Sch. 1896. Med. Ex. N Y. L., Mut. and Equit. Assur. Cos. Papers: Treatment of Fractures of Humerus, 1901.

Rixey, Alfred Southerland, Culpeper, Culpeper Co., Va.—8.
B. Culpeper, Va., June 27, 1861. Educ. Bethel Mil. Acad. Grad. M. D. Jeff. Med. Col. 1882. Elec. 1885. Att. Sess. all but 2 since. Mem. Com. on Nom. of Applicants 1890-1908. Mem. Nat. Assn. Ry. Surg. Loc. Surg. So. and C. & O. Ry. Cos.

Robertson, Edgar W., Onancock, Accomac Co., Va.—1.
B. Kingston, Somerset Co., Md., Oct. 2, 1845. Educ. Margaret Acad. and day sch. Grad. M. D. Univ. Md. 1866. Elec. 1895. Mem. E. Shore Va. Med. Soc. Papers: Cholera Infantum, 1895; Has Chloride Sodium Toxicological Effects? 1879; Dystocia in Case of Twins, 1884; Uterine Polypus Amputated Near Os Uteri by Bristoway, Followed by Phlebitis—Complete Recovery, 1884.

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Robertson, Holcombe McGavock, Pub. Health & Mar. Hosp Service, Washington, D. C.
B. Max Meadows, Va., Oct. 24, 1874. A. B. Hampden-Sidney Col. 1896. Grad. M. D. Univ. Va. 1900. Brd. Dec., 1900. Elec. 1901. Present 1901.

Robertson, Luther Addison, Danville, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Dec. 21, 1874. Educ. Danville Mil. Inst.; A. B. Wake Forest Col. 1897. Grad M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1901. Inst. Ophthal., Univ. Col. Med., Richmond; Res. Phy. Richmond Eye, Ear, Nose and Throat Inf.; Asst. Dr. J. A. White, Richmond.

Robertson, Jr., Wm. S., Mount Cross, Pittsylvania Co., Va.—5.
B. Pittsylvania Co., Va., Dec. 4, 1862. Educ. Univ. of Va. Grad. M. D. Col. Phys. and Surg., Balto., 1885. Brd. Aug., 1885. Elec. 1889. Present 1891, 3, 6, 8, 1900, 2, 4. Att. N. Y. Post-Grad. Med. Sch. and Hosp. 1891.

Robertson, William Sterling, Charleston, Kanawha Co., W. Va.
B. Richmond, Va., June 24, 1880. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1905.

Robertson, Wm. W., Witt, Pittsylvania Co., Va.—5.
Grad. M. D. Col. Phys. and Surg., Balto., 1890; Bellevue Hosp. Med. Col. 1891. Brd. 1891. Elec. 1891.

Robey, William I., Cape Charles, Northampton Co., Va.—1.
Grad. M. D. Columbian (now Geo. Wash.) Univ., D. C., 1902. Brd. Dec., 1907. Elec. 1908.

Robins, Charles Russell, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Dec. 31, 1868. Grad. Richmond H. Sch. Grad. M. D. Med. Col. Va. 1894. Brd. April, 1894. Elec. 1896. Mem. Rich Acad. Med. and Surg.; of Tri-State Med. Assn.; So. Surg. and Gyn. Assn., Am. Med. Assn. Prof. Gyn. Med. Col. Va. Gyn. Mem. Hosp. Surg. City Hosp.

Robinson, John A., Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Univ. of Md. 1883. Elec. 1888.

Robinson, Julian McGruder, Danville, Pittsylvania Co., Va.—5.
B. Danville, Va., July 15, 1875. Educ. Hampden-Sidney Col. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1903. Mem. Tri-State Med. Soc.; V.-Pres. Danville Acad. of Med. Papers: Pathology and Treatment of Acute Gonorrhoea, 1903.

Robinson, Malcolm Graham, R. F. D. 2, Max Meadows, Wythe Co., Va.—9.
B. Graham Forge, Wythe Co., Va., Sept. 7, 1870. Educ. Randolph-Macon Col. Att. Med. Lect. Univ. Va. Grad. M. D. Med. Col. Va. 1897. Brd. Oct., 1894. Elec. 1899. Med. Ex. Equit., N. Y. Mut., and N. W. L. Ins. Cos. Res. Phy. Va. Iron, Coal & Coke Co., Foster Falls, Va., and Saunders Mines, Wythe Co., Va.

Robinson, Noah M., Sinking Creek, Craig Co., Va.—9.
B. Woodlawn, Va., Nov. 1, 1875. Educ. Wash. and Lee Univ. and Woodlawn Nor. Inst. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1905.

Robinson, Robert Wilson, Danville, Pittsylvania Co., Va.—5.
B. Henry Co., Va., Feb. 24, 1869. Educ. Danville H. Sch., Richmond Col. Grad. M. D. Med. Col. Va. 1891. Brd. April, 1891. Elec. 1892. Mem. Al. Assn. Med. Col. Va., of Danville Acad. of Med., of Am. Med. Assn. Hlth. Offi. of Danville, 1898-1906.

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Robinson, Sidney M., Woodlawn, Carroll Co., Va.—5.
B. Carroll Co., Va., May 31, 1860. Educ. Co. Sch. Grad. M. D. Med. Col. Va. 1886. Brd. April, 1886. Elec. 1886. Present 1887.

Robinson, Willard Bellamy, Tappahannock, Essex Co., Va.—1.
Grad. M. D. Ky. Sch. of Med. 1885. Licensed to Prac. Med. before Jan., 1885. Elec. 1893. Mem. Med. Ex. Brd. Va. 1899-1909.

Robinson, William Laville, Danville, Pittsylvania Co., Va. Res. Hon. Mem.—5.
B. Cumberland Co., Va., Feb. 14, 1845. Educ. Univ. Va. Grad. M. D. Univ. Va. 1868. Elec. 1874. Att. Sess. many. V.-Pres. and Act. Pres. 1882. Pres. 1895-6. Elec. Hon. Mem. 1896. Leader Dis. 1894. Mem. Med. Ex. Brd. Va. since organ., 1885. Del. to St., Nat. and Int. Assns. Mem. Am. Med. Assn.; of Am. Assn. Obs. and Surg.; of So. Surg. and Gyn. Assn.; Pied. Med. Soc.; Dan. Acad. of Med.

Rodgers, Chas. W., Staunton, Augusta Co., Va.—10.
B. Highland Co., Va., Feb. 21, 1862. Grad. M. D. Univ. of Va. 1885. Brd. 1885. Elec. 1888. Present 1888, 9, 1890, 4, 8.

Rodgers, George Christman, Elkins, Randolph Co., W. Va.
Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. 1900. Elec. 1902.

Rogers, Orville Layne, Covington, Alleghany Co., Va.—10.
B. Alleghany Co., Va., July 25, 1859. Grad. M. D. Univ. Nashville and Vanderbilt Univ. 1881. Elec. 1886. Present 1887. Surg. C. & O. Ry. Coroner Alleghany Co., Va.

Rogers, Richard Ovid, Richmond, Henrico Co., Va.—3.
B. Surry Co., Va., 1882. A. B. Grad. M. D. Med. Col. Va. 1907. Brd. Dec., 1907. Elec. 1908. Present 1908. Mem. Rich. Acad. Med. and Surg., Southside Va. Med. Soc.

Rogers, William Russell, Bristol, Washington Co., Va.—9.
B. Fort Worth, Texas, 1875. Grad. M. D. Univ. Md., Balto., 1901. Brd. June, 1901. Elec. 1904. Asst. Res. Surg. Univ. Md. Hosp. 1901-2. Mem. Bristol Med. Soc., and S. W. Va. Med. Soc.; City (Bristol) Phy. Papers: Administration of Anesthetics, 1903.

Roller, William Crawford, Mint Spring, Augusta Co., Va.—10.
B. Ft. Defiance, Va., Oct. 29, 1876. Educ. Augusta Mil. Acad. Grad. M. D. Univ. Va. 1899. Brd. Dec., 1900. Elec. 1903.

Rolston, Charles Hopkins, Mt. Clinton, Rockingham Co., Va.—7.
B. Mt. Clinton, Va., Sept., 1860. Educ. Univ. Va. Grad. M. D. Univ. Va. 1884. Post-Grad. N. Y. Poly. Elec. 1884. Present 1884. Med. Ex. Equit. Life.; of Interstate and Val. Mut. Assns.

Ropp, John Marsham, Shenandoah, Page Co., Va.—7.
B. Abingdon, Va., June, 1867. Educ. Hazel Ridge Acad., Brunswick, Mo.; Col. Phy. & Surg., Balto., Md., 1887-8. Grad. M. D. (first honor) Vanderbilt Univ. 1891, and Univ. Nashville, Tenn., 1892; Post-Grad. Med. Col. Va. 1894, and Johns Hopkins Hosp. 1895 and 1900. Brd. 1894. Elec. 1904. Mem. (and Ex-Pres.) Bristol Med. Soc.; E. Tenn. Med. Soc.; of S. W. Va. Med. Soc.

Rose, George Hobson, Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Univ. Pa. 1880. Elec. 1888.

Ross, Charles H., Bassett, Henry Co., Va.—5.
B. Elamville, Va. Educ. Stuart Nor. Sch. Grad. M. D. Balto. Univ. 1892, and Balto. Med. Col. 1894. Brd. April, 1893. Elec. 1904. Mem. Patrick Henry Med. Soc., and Co. Brd. of Hlth.

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Ross, Clyde Fenton, West Point, King William Co., Va.—3.
B. Trapp, Va., Aug. 8, 1882. Educ. Roanoke Col. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1905.

Ross, George, Richmond, Henrico Co., Va. Res. Hon. Mem.—3.
B. Culpeper Co., Va., Oct. 22, 1838. Grad. Va. Mil. Inst. 1859. Grad. M. D. Univ. Va. 1861. Elec. 1872. Hon. Mem. 1906. Present 1875-7-8, 1883-7-8, 1894, 1904-8. V.-Pres. Nat. Assn. Ry. Surg.; Rich. Acad. Med.; Mem. So. Surg. and Gyn. Assn., Am. Med. Assn. Hon. Mem. Abingdon Acad. Asso. Med. Dir. C. S. A., A. P. Hill's 3d Army Corps, A. N. V. Surg. Cadets Va. Mil. Inst. Battle of New Market, 1864.

Rosser, Reid Arnold, Portsmouth, Norfolk Co., Va.—2.
B. Rustburg, Va., Aug. 23, 1871. Educ. Sunnyside Acad., Bedford City, Va. Grad. M. D. Univ. Col. Med., Richmond, 1896. Brd. June, 1896. Elec. 1898.

Rosser, Walter C., Rustburg, Campbell Co., Va.—6.
B. Campbell Co., Va., Aug. 31, 1875. A. B. of Va. Poly. Inst. Grad. M. D. Univ. Col. of Med., Richmond, 1897. Brd. 1897. Elec. 1901. Present 1901, 8. Med. Ex. for N. Y., N. Y. Mut. and N. W. L. Ins. Cos.

Roy, James P., Richmond, Henrico Co., Va.—3.
Grad M. D. Univ. of Va., 1884. Brd. 1886. Elec. 1904.

Royster, Lawrence Thomas, Norfolk, Norfolk Co., Va.—2.
B. Norfolk, Va., Aug. 18, 1874. Educ. Norfolk Acad. and Univ. Va. Grad. M. D. Univ. Va. 1897. Brd. Dec., 1899. Elec. 1902. Mem. Norfolk Med. Soc.; of Sea. Med. Assn., and Am. Med. Assn.

Rucker, Claude N., Clifton Forge, Alleghany Co., Va.—10.
B. Bedford Co., Va., March 21, 1880. Grad. Lynchburg H. Sch. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1904. Elec. 1906. Mem. of Wise Co. Med. Soc.; of Med. Soc. of W. Va.

Rucker, E. T., Manchester, Chesterfield Co., Va.—3.
Grad. M. D. Ky. School Med. 1876. Elec. 1886.

Rucker, Henry Cowles, Big Stone Gap, Wise Co., Va.—9.
B. Amherst, Va., April 3, 1878. Educ. Washington, D. C.; Corcoran Scient. Grad. M. D. Columbian Univ., D. C., 1902. Brd. Dec., 1904. Elec. 1906. Mem. S. W. Va. Med. Soc.; of Wise Co. Med. Soc.; of Am. Med. Assn.

Rucker, Joseph A., Bedford City, Bedford Co., Va.—6.
B. Bedford Co., July, 1871. Educ. New London Acad. Grad. M. D. Univ. of Louisville 1893. Brd. April, 1893. Elec. 1897. Surg. N. & W. R. R.

Rucker, Marvin Pierce, Manchester, Chesterfield Co., Va.—3.
B. Pohick, Fairfax Co., Va., Jan. 6, 1881. A. M. Randolph-Macon Col.; Stud. Med. Med. Col. Va. Grad. M. D. Johns Hopkins Univ. 1903. Brd. June, 1903. Elec. 1904. Mem. Chesterfield Co. Med. Soc.; Lect. & Dem. of Biol., and Asst. Dem. of Phys., Med. Col. Va. Pres. Brd. of Hlth., Manchester.

Rucker, Moses Peter, Bedford City, Bedford Co., Va.—6.
B. Moneta, Va., June, 1876. Educ. New London Acad. and Bedford H. Sch. Grad. M. D. Md. Med. Col. 1904. Brd. June, 1905. Elec. 1905.

Rucker, Samuel L., Davis Mills, Bedford Co., Va.—6.
Grad. M. D. Univ. Col. of Med., Richmond, 1897. Brd. August, 1897. Elec. 1903.

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Rucker, Thomas Erle, Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Med. Col. Va. 1897. Brd. June, 1896. Elec. 1902.

Ruffin, Kirkland, Norfolk, Norfolk Co., Va.—2.
B. Hanover Co., Va., March 22, 1866. Educ. Univ. Va. Grad. M. D. Univ. Va. 1886. Brd. April, 1888. Elec. 1888. Present 1888, 1908. Mem. Norfolk Med. Soc.

Ruggieri, Rosario, Norfolk, Norfolk Co., Va.—2.
Born Sicily, Nov. 20, 1874. Grad. M. D. Univ. of Naples 1899. Brd. June, 1905. Elec. 1905. Present 1905. Phy. to Royal Ital. Cons.; Surg. Creole S. S. Co.; Med. Ex. Home L. Ins. Cos.

Runyon, Emily Chernault, Richmond, Henrico Co., Va.—3.
B. Richmond, Ky. Grad. Madison Inst., Ky.; Stud. Med. Univ. Mich., Ann Arbor. Grad. M. D. N. W. Univ. 1888. Brd. May, 1895. Elec. 1895. Course at N. Y. Post-Grad. Sch. Past Asst. Supt. Cook Co. Inf., Chicago. Ex-Mem. Kan. St. Med. Soc., So. Kan. Med. Soc., and Wachita Med. Soc.

Russell, Charles F., Herndon, Fairfax Co., Va.—8.
Grad. M. D. Univ. of Md. 1867. Elec. 1906.

ager, Charles Joseph, Charleston, Kanawha Co., W. Va.
B. Woodstock, Va., 1873. Educ. Shenan. Col. Inst., Dayton, Va. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1897. Elec. 1906. Mem. Soc. Al. Med. Col. Va.

Sale, William Dandridge, Loretto, Essex Co., Va.—1.
Stud. Med. Univ. Va. 1860-1. Grad. M. D. Med. Col. Va. 1864. Elec. 1904.

Sanders, Daniel Miller, Chilhowie, Smyth Co., Va.—9.
B. Chilhowie, Va., Feb. 21, 1871. A. B. of Emory and Henry Col. Grad. M. D. Med. Col. Va. 1899. Brd. Nov., 1899. Elec. 1901. Present 1901. Mem. Sigma Alpha Epsilon Frat.

Sandidge, Edward, Amherst, Amherst Co., Va.—10.
Grad. M. D. Med. Col. Va. 1902. Brd. June, 1902. Elec. 1906.

Sanford, Harry Bennette, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904.

Saunders, Charles Allen, Norfolk, Norfolk Co., Va.—2.
B. Emporia, Greenesville Co., Va., Feb. 26, 1866. Educ. Pub. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Present 1899, 1900, 2, 3, 4, 5, 8. Mem. Norfolk Med. Soc.; of Sea. Med. Assn.; of Am. Med. Assn.; Order R. R. Conductors; Odd Fellows, Masons, Pythian, Maccabee, Frat. Mys. Circle. Papers, Traumatic Tetanus, 1900; Necessity of Educ. the Masses as Prev'n Tuber.

Saunders, Wade Hampton, Roanoke, Roanoke Co., Va.—6.
B. Kasey, Bedford Co., Va., Dec. 12, 1876. Grad. M. D. Univ. Col. of Med., Richmond, 1903. Elec. 1903.

Sawyer, Leroy L., Great Bridge, Norfolk Co., Va.—2.
B. Perquimans Co., N. C., July 25, 1863. Grad. M. D. Univ. Md. 1890. Brd. 1890. Elec. 1905. Mem. Sea. Med. Assn.

Sayers, S. R., Wytheville, Wythe Co., Va.—9.
Grad. M. D. Med. Dept. Univ. of Pa. 1855. Elec. 1871. Att. Sess. several. Mem. Va. Legis. 1893-4.

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Sayers, William Spiller, Wytheville, Wythe Co., Va.—9.
Grad. M. D. Univ. of Va. 1893. Brd. April, 1894. Elec. 1894. Present 1894.

Schenck, Powhatan Stanley, Norfolk, Norfolk Co., Va.—2.
B. Petersburg, Va., April 18, 1863. Educ. McCabe's Univ. Sch. and Petersburg H. Sch. Grad. M. D. Col. of Phy. and Surg., Balto., Md., 1884. Post-Grad. Chicago Eye, Ear, Nose and Throat Inf. Elec. 1902. Med. Assn.; Ex-Pres. Brd. Hlth. Petersburg; Med. Ex. several Ins. Cos.; Asst. Surg. Norfolk Ry. and Light Co.; St. Quar. Med. Off.

Schroeder, William Charles, Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., Feb. 19, 1876. Educ. Rock Hill Col., Ellicott City, Md. Grad. M. D. Univ. of Va. 1899, and N. Y. Poly. Med. School and Hosp. 1902. Brd. June, 1903. Elec. 1904. Med. Ex. Mass. Mut., Fid. Mut. L. Ins. Cos., Heralds of Lib. Mem. Hlth Dept. Greater N. Y. 1901, also Good Sam. Dis., U. S. Pub. Health and Mar. Hosp. Service, Portland, Me.; Surg. Greenbrier Div. of C. & O. Ry. Co., W. Va.

Schwab, Lester Linwood, Roanoke, Roanoke Co., Va.—6.
B. Warrenton, Va., June 23, 1878. Educ. Bethel Mil. Acad. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. Dec., 1900. Elec. 1908. Mem. S. W. Va. Med. Soc., Rich. Acad. Med. and Surg., V.-Pres. Roanoke Acad. of Med.

Scott, Charles M., Bluefield, Mercer Co., W. Va.
B. Tazewell Co., Va., 1878. Educ. Princeton H. Sch., Richmond Col., Univ. Va., Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. Dec., 1901. Mem. Mercer Co. and Tazewell Co. Med. Socs.

Scott, James M., Raccoon Ford, Culpeper Co., Va.—8.
Elec. 1880.

Scott, John W., Gordonsville, Orange Co., Va.—8.
B. Orange Co., Va., Aug. 22, 1855. Educ. Priv. Tut. and H. Sch. Stud. Med. Univ. of Va. Grad. M. D. Col. Phy. and Surg., Balto., 1878. Elec. 1878. Att. Sess. six. Mem. Pied. Med. Soc. Papers for Soc., Report on Practice of Med., 1889. Other papers, Hysteria.

Scott, Robert Hunter, Richmond, Henrico Co., Va.—8.
B. Richmond, Va., Nov. 16, 1876. Grad. M. D. Med. Col. Va. 1901. Brd. Oct., 1901. Elec. 1905.

Scott, Sidney Lockhart, Fredericksburg, Spotsylvania Co., Va.—1.
B. Fredericksburg, Va., April, 1879. A. B. of Fredericksburg Col. 1898. Grad. M. D. Univ. Va. 1901. Brd. Dec., 1901. Elec. 1908. Present 1908. Mem. Rappahannock Val. Med. Soc. Asst. Surg. U. S. Navy 1903-5.

Sears, Charles Edward, Salem, Roanoke Co., Va.—6.
B. Haran, Va., April 24, 1873. Educ. Pub. and Nor. Schs. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1908. Mem. Assn. Mil. Surgs.

Seay, Cornelius James, 208 W. Eighty-second Street, New York, N. Y.
B. Fluvanna Co., Va., 1873. Educ. Richmond H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. 1897. Elec. 1899. Mem. Al. Assn. Univ. Col. Med., Richmond.

Sebrell, J. Emmett, Norfolk, Norfolk Co., Va. 2.
Grad. M. D. Med. Col. Va. 1882. Elec. 1887.

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Segar, Henry Launcelot, Warsaw, Richmond Co., Va.—1.
B. Middlesex Co., Va., March 21, 1869. Educ. Locust Dale Acad. and Culpeper C. H. Schs. Grad. M. D. Med. Col. Va. 1898. Brd. Aug., 1898. Elec. 1906. Mem. N. Neck Med. Soc. Med. Ex. several L. Ins. Cos.

Selby, John Hunter, Warrenton, Fauquier Co., Va.—8.
B. Columbia, S. C., Feb. 27, 1878. Educ. Pub. Sch. and S. C. Col. Grad. M. D. Univ. Va. and Univ. of Pa. 1907. Brd. by Recip. with Md. June, 1908. Elec. 1908. Present 1908. Mem. Med. Socs. N. Va.; of D. C.; of Am. Med. Assn.

Selden, Stuart Wray, Oak Hill, Fayette Co., W. Va.
B. Selden, Va., 1880. B. A. Grad. M. D. Med. Col. Va. 1904. Brd. 1904. Elec. 1904.

Sellers, Frank Este, Mauzy, Rockingham Co., Va. (U. S. N. Acad., Annapolis, Md.)—7.
B. Mauzy, Va., Aug. 14, 1875. Educ. W. Cent. Acad. Grad. M. D. Univ. of Va. 1901. Brd. June, 1901. Elec. 1901. Res. Phy. Univ. Va. Hosp. 1901, 2.

Seward, Robert Lee, Isle of Wight, Isle of Wight Co., Va.—2.
B. Surry Co., Va., July 31, 1862. Grad. M. D. Univ. of Md. 1891. Brd. April, 1891. Elec. 1891.

Seward, William Ward, Surry, Surry Co., Va.—4.
B. Surry Co., Va., Sept. 1, 1873. Educ. Richmond Col. Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1898. Asst. Surg. Troop B Cav., Va. Vols.

Shackelford, Jesse M., Martinsville, Henry Co., Va.—5.
B. Irisburg, Va., 1869. Educ. Pub. Sch., Looksville Acad., N. C., and Agric. and Mech. Col., Blacksburg, Va. Grad. M. D. Balto. Med. Col. 1891. Brd. 1891. Elec. 1898. Present 1898, 1908. Mem. (and V.-Pres. 1896) Henry Co. Med. Soc. Papers, Typhoid Fever, 1896; Antitoxin Treatment of Diphtheria, 1898. Councilor 5th Dist, 1908-9.

Shacklette, James R., Orlean, Fauquier Co., Va.—8.
B. Morrisville, Va., 1883. Educ. Pub. H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908.

Shands, Aurelius Rives, 901 Sixteenth Street, N. W., Washington, D. C. Non-Res. Hon. Mem.
B. Pr. Geo. Co., Va., Nov. 5, 1860. Educ. McCabe's Univ. Sch., Petersburg, Va. Grad. M. D. Univ. Md., 1884. Elec. 1894. Hon. Mem. 1904. Mem. Am. Orth. Assn.; Med. Soc. of D. C.; Med. and Surg. Soc., D. C.; So. Surg. and Gyn. Assn.; of Wash. Obs. and Gyn. Soc.; Prof. Orth. Surg. Geo. Wash. Univ. and Univ. of Vt.; Orth. Surg. to Geo. Wash. Univ. Hosp. Charter Mem. Wash. Acad. of Sci.

Shaver, D. L., Maurertown, Shenandoah Co., Va.—7.
B. Shenandoah Co., Va. Educ. Univ. Ky. Grad. M. D. Balto. Med. Col. 1888. Brd. 1891. Elec. 1891. Prac. in W. Va. 1888-1891. Mem. Harrison Co. (W. Va.) Med. Soc.

Shelton, Rawley Martin, Keeling, Pittsylvania Co., Va.
B. Elba, Va., June 30, 1871. Educ. Shenandoah Nor. Col., Reliance, Va., and Littleton H. Sch., N. C. Grad. M. D. Univ. Va. 1887. Brd. June, 1898. Elec. 1902.

Shepherd, Lemuel C., Norfolk, Norfolk Co., Va.—2.
B. Petersburg, Va., Jan. 23, 1864. Educ. Epis. H. Sch., Va. Grad. M. Bellevue Hosp. Med. Col. 1886. Brd. 1886. Elec. 1886. Present 1888. Mem. Norfolk Med. Soc.

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Shepherd, William Almon, Richmond, Henrico Co., Va.—3.
B. Hurricane, W. Va., Jan. 9, 1876. A. B. Wash. and Lee Univ. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904. Adj. to Chair. Pract. Med. Med. Col. Va. Prac. limited to Dis. Dig. Sys.

Sherrill, Zeb Vance, Smyth Co., Va.—9.
B. Caldwell Co., N. C., Jan. 8, 1862. Educ. Oak Hill Acad., Va. Grad. M. D. Med. Col. Va. and Univ. Louisville, Ky., March, 1888. Brd. April, 1888. Elec. 1890. Present 1890, 1, 2, 4, 6, 8, 1903, 5. Mem. Am. Med. Assn. since 1896; of S. W. Va. Med. Soc.; of First Asst. Phys. S. W. St. Hosp. 1896-1901; Mem. Smyth Co. Brd. of Hlth.

Shipp, John Bonney, Norfolk, Norfolk Co., Va.—2.
B. Princess Anne Co. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1903. Brd. Dec., 1903. Elec. 1904.

Shippen, William, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Med. Col. Va. 1887. Brd. 1899. Elec. 1904.

Shute, D. K., 1730 DeSales Street, N. W., Washington, D. C.
B. Alexandria, Va., Oct. 22, 1858. A. B. Colum. Univ., D. C. Grad. M. D. Colum. (now Geo. Wash.) Univ., D. C., 1884. Prac. Fauquier Co., Va., prior to Ex. Brd. Elec. 1906. Pres. Med. Soc., D. C., 1907. Pres. 1908 Wash. Soc. of Oph. and Otol.. Mem. Am. Assn. Adv. of Sci.; of Assn. of Am. Anat.; of Med. Assn., D. C.; of Am. Med. Assn.; of Anth. Soc., D. C. Clin. Asst. Royal Oph. Hosp., London.

Simmons, Frank Greene, Ginter Park, Richmond, Henrico Co., Va.—3.
B. Adairville, Ky., Sept. 12, 1867. Educ. Bethel Col., Russellville, Ky. Grad. M. D. Vanderbilt Univ. 1890. Brd. June, 1908. Elec. 1908. Present 1908. Mem. Graves Co., Ky., and Cochise Co., Ariz. Med. Socs. (and Ex-Pres.) S. Ky. Med. Assn. Papers, L. Ins. Exams. 1904; Typhoid Fever, 1898.

Simmons, John W., Martinsville, Henry Co., Va.—5.
B. Floyd Co., Va., Jan. 16, 1859. Educ. Pub. Sch. and Oxford Acad., Floyd C. H., Va. Grad. M. D. Med. Col. Va. 1885. Elec. 1885. Present 1885, 8, 1891, 2, 4, 9, 1901, 3, 8. Med. Ex. Mut., S. Atlan. and other L. Ins. Cos. Was Supt. of Pub. Sch., Floyd Co., four years. Loc. Surg. N. and W. R. Ry. Co. Mem. Am. Med. Assn.

Sims, Edgar W., Standardsville, Greene Co., Va.—7.
Grad. M. D. Col. Phys. and Surg., Balto., March, 1883. Elec. 1896.

Sims, Richard Henry, Powellton, Brunswick Co., Va.—4.
B. Brunswick Co., Va., Aug. 18, 1842. Educ. Va. Mil. Inst. and Univ. of N. C. Grad. M. D. Jeff. Med. Col., Phila., 1867. Elec. 1901.

Sims, Thomas Jackson, Newport News, Warwick Co., Va.—1.
Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1902.

Sizer, Alexander A., Schuyler, Nelson Co., Va.—10.
B. Beulahville, Va., Nov. 27, 1870. Educ. Pub. and Priv. Schs. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. July, 1899. Elec. 1899. Co. Phy. Warwick Co.; Surg. Carbolane Slate Co., Nelson and Albemarle Ry. Co. and Va. Soapstone Co.

Skinner, Charles Locke, Charlestown, Jefferson Co., W. Va.
B. Harrisonburg, Va., 1873. Educ. Pub. Sch. and Charlestown (W. Va.) Acad. Grad. M. D. Univ. of Va. 1897. Brd. Aug., 1897. Elec. 1901.

Slade, Joseph F., Sussex, Sussex Co., Va.—4.
B. Prince George Co., Va., 1862. Grad. M. D. Bellevue Hosp. Med. Col. 1888. Brd. July, 1888. Elec. 1894. Present 1894, 1908.

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Slaughter, Robert Madison, Theological Seminary, Fairfax Co., Va.—8.
B. Madison Co., Va., Feb. 15, 1857. Educ. H. Sch., Locust Dale Acad. Stud. Med. Univ. Va. 1877, 8. Grad. M. D. Univ. Va. and Col. Phys. and Surg., Balto., 1879. Elec. 1880. Present 1880, 4, 6, 7, 8, 1891, 2, 3, 4, 8, 1900, 1, 3, 4, 5, 6, 7, 8. Mem. Com. on Nom. 1886-'97; Third V.-Pres. 1893, 4. · Lead. of Dis. Chronic Nephritis, 1893. Treas. 1903-1909. Med. Exam. Brd. Va. 1894-1910. Prize Essay 1887.

Slaughter, Samuel Garland, Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Univ. City of N. Y. 1883. Elec. 1901.

Sledge, James Thomas, Parksley, Accomac Co., Va.—1.
B. Warrenton, Warren Co., N. C., Oct. 20, 1852. Educ. Warrenton Male Acad. Grad. M. D. Univ. Md. 1877. Elec. 1894. Present 1894, 1908. Passed N. C. Med. Ex. Brd. May, 1879. Asst. Res. Phy. Md. Univ. Hosp. 1877. Mem. E. S. Va. Med. Soc.; of Am. Med. Assn.

Sleet, John Cary, Berkley, Norfolk Co., Va.—2.
Grad. M. D. Univ. Md. 1899. Brd. June, 1899. Elec. 1905.

Slicer, Walter Stevenson, Cripple Creek, Wythe Co., Va.—9.
B. Montvale, Bedford Co., Va., March 12, 1880. Educ. Montvale Subcol. Col. Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1905. Mem. S. W. Va. Med. Soc.; Surg. Va. Iron, Coal and Coke Co. Papers, Diphtheria.

Sloan, Julian Wylie, Richmond, Henrico Co., Va.—3.
B. Chester, S. C., Feb., 1879. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1905. Elec. 1905. Mem. Richmond Acad. of Med. and Surg.

Smallwood, John Pugh, West End, Fairfax Co., Va.—8.
B. Lewiston, N. C., Jan. 10, 1865. Educ. Horner Sch., Oxford, N. C. Grad. M. D. Univ. of Md. 1885. Brd. Oct., 1888. Elec. 1905. Mem. and Secy. Fairfax Co. Med. Soc.

Smiley, W. Macon, Houston, Halifax Co., Va.—6.
Grad. M. D. Med. Col. Va. 1902. Brd. June, 1902. Elec. 1904.

Smith, Alick Thomas, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908.

Smith, Jr., Cornelius T., Tunnelton, Preston Co., W. Va.
Grad. M. D. Columbian Univ., D. C., 1900. Brd. 1900. Elec. 1902.

Smith George Lee, Rondo, Pittsylvania Co., Va.—5.
B. Mineola, Va., Feb. 11, 1869. Educ. Va. Agric. and Mech. Col., Blacksburg, Va. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1892. Brd. April, 1892. Elec. 1906. Mem. Pittsylvania Co. Med. Soc. Phy. and Surg. to Co. (Pitt.) Almshouse.

Smith, Henry, Norfolk, Norfolk Co., Va.—2.
B. Ontario, Canada. Educ. Pub. Sch. Grad. M. D. Univ. of Mich., 1859, and Victoria Col., Can., 1861. Elec. 1886. Present 1887. Ex-Mem. Norfolk Co. Med. Soc.; Surg. U. S. Army, 1863, 8; Surg. U. S. Mar. Hosp. Service, 1876-85. Papers, Reports to U. S. Mar. Hosp. on Yellow Fever.

Smith, James Edwin, Petersburg, Dinwiddie Co., Va.—4.
B. Mt. Pleasant, Va., Nov. 15, 1873. Educ. Randolph-Macon Col. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. Dec., 1900. Elec. 1901. Mem. Sea. Med. Assn. Phy. to Co. (Prin. Anne) Almshouse and Jail.

Smith, J. S., East Radford, Montgomery Co., Va.—6.
Grad. M. D. Col. Phy. and Surg., Balto., 1887. Brd. 1887. Elec. 1904.

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Smith, James Weldon, R. F. D. 1, Farmville, Prince Edward Co., Va.—4.
(Lives in Cumberland Co.)
Grad. M. D. Med. Col. Va. 1898. Brd. Dec., 1902. Elec. 1905.

Smith, Orville McLeod, Palmyra, Fluvanna Co., Va.—10.
B. Sparta, N. C., March 19, 1868. Educ. Sparta Inst., N. C., and Emory and Henry Col., Va. Att. Med. Col. Va. Brd. April, 1890. Elec. 1906. Mem. and ex-Pres. Inter-Co. Med. Soc. (Fluv., Gooch., Buck., Alb. and Louisa); Secty. Co. (Fluv.) Brd. Hlth. Papers, Eclampsia: Six Convulsions in Thirty Minutes; Removal of Chinquepin from Larynx by Tracheotomy—Recovery.

Smith, Thomas Benjamin, Shaws Store, Mecklenburg Co., Va.—4.
Grad. M. D. Jeff. Med. Col. 1883. Elec. 1904.

Smith, Jr., Thomas Benjamin, Shaws Store, Mecklenburg Co., Va.—4.
B. Shaws Store, Va., July 2, 1885. Educ. Petersburg Acad. and La 1907. Elec. 1908. Mem. S. A. L. Ry. Surgs.

Smith, Thomas W., Bethel Academy, Fauquier Co., Va.
Grad. M. D. Col. Phy. and Surg., Balto., Md., 1876. Elec. 1877.

Smith, William A., Haywood, Madison Co., Va.—7.
Grad. M. D. Univ. of Md. 1880. Elec. 1904.

Smith, William Breckenridge, Poquoson, York Co., Va.—1.
B. Dorchester Co., Md., 1870. Educ. Stratton Col. Grad. M. D. Univ. of Md. 1899. Brd. June, 1899. Elec. 1902. Present 1902. Mem. Crosse H. Sch. Grad. M. D. Univ. Nashville, Tenn., 1907. Brd. June, Am. Med. Assn.; of Sea. Med. Soc.; of Newport News Med. Soc.; Staff Newport News Hosp.

Smith, Wiliam Jackson, Sperryville, Rappahannock Co., Va.—7.
B. Madison Co., Va. Educ. Roanoke Col. Grad. M. D. Jeff. Med. Col., Phila., Pa., 1886. Brd. July, 1886. Elec. 1906.

Smith, William M., Alexandria, Alexandria Co., Va.—8.
Grad. M. D. Univ. of Md. 1879. Elec. 1891.

Smith, William Oliver, Altavista, Campbell Co., Va.—6.
B. Penhook, Va., July 30, 1869. Grad. M. D. Univ. Col. of Med., Richmond, 1898. Brd. Sept., 1898. Elec. 1899.

Smith, William Tilden, Norfolk, Norfolk Co., Va.—2.
B. K. & Q. Co., Va., Oct. 11, 1878. Educ. West Point and Stevensville, Va., Acad. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1904. Present 1904. Pres. Grad. Class Med. Col. Va. 1903, 4.

Smoke, Edgar B., White Hall, Frederick Co., Va.—7.
Grad. M. D. Med. Col. Va. 1867. Elec. 1893.

Smoot, James Henry, Woodstock, Shenandoah Co., Va.—7.
B. Woodstock, Va., Sept. 21, 1867. Educ. Fishburne Mil. Acad. and Wash. and Lee Univ. Grad. M. D. Univ. of Md. 1892. Brd. April, 1892. Elec. 1906.

Smyth, H. Stuart, Georgel, Wise Co., Va.—9.
Educ. Emory and Henry Col. Grad. M. D. Med. Col. Va. 1894. Brd. 1894. Elec. 1908.

Snead, Henry Martin, Fork Union, Fluvanna Co., Va.—10.
B. Fork Union, Va., 1885. Educ. Fork Union Acad. Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1908. Phy. to Fork Union Acad.

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Snead, Nash P., Cartersville, Cumberland Co., Va.—10.
Grad. M. D. Med. Col. of Va. 1893. Brd. 1892, as non-Grad. Elec. 1893.

Snead, William Winton, Dante, Russell Co., Va.—9.
B. Etna Mills, K. Wm. Co., Va., June 4, 1880. Educ. Wm. and Mary Col. Grad. M. D. Univ. of Va. 1906. Brd. June, 1906. Elec. 1906. Present 1906.

Sneed, Edwin M., Stafford, Stafford Co., Va.—8.
B. Albemarle Co., Va., Feb. 27, 1857. Grad. M. D. Med. Col. Va. 1888. Brd. Oct., 1888. Elec. 1890. Present 1890, 1908. Fluvanna Co. Phy. Papers, Herniotomy Under Cocaine Anaesthesia.

Somerville, John W., Norfolk, Norfolk Co., Va.—2.
Grad. M. D. Univ. of Va. 1904. Brd. June, 1907. Elec. 1908.

Sommerville, Henry C., White Post, Clarke Co., Va.—7
Grad. M. D. Univ. of Penn., Phila., 1870. Elec. 1894.

Southall, Philip T., Amelia, Amelia Co., Va.—4.
B. Amelia Co., Va., May 18, 1851. Educ. Wash. Acad., Amelia Co., Va. Grad. M. D. Med. Col. Va. 1873. Elec. 1887. Present 1888, 9, 1890, 8, 9, 1908. Mem. Am. Med. Assn.; Mem. Brd. Hlth. and Brd. Super. Amelia Co.; of Brd. of Dir. E. St. Hosp.

Sparks, George Harrison, Mitchell, Culpeper Co., Va.—8.
B. Madison C. H., Va., Nov. 11, 1869. Educ. Locust Dale Acad. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1900.

Spalding, B. D., Richmond, Henrico Co., Va.—3.
Grad. M. D. Univ. Md. 1891. Brd. 1892. Elec. 1892. Present 1892, 4, 1908.

Spencer, Hunter Boyd, Staunton, Augusta Co., Va.—10.
B. Little Plymouth, Va., 1883. Educ. Priv. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1908. Present 1908. Mem. Aug. Co. Med. Soc. Res. Phy. Va. Hosp. 1907, 8. City (Richmond) Bact. 1907, 8.

Spencer, John Blair, 1410 M. Street, N. W., Washington, D. C.
Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1904.

Spencer, William Lee, Jonesville, Lee Co., Va.—9.
B. Longfield, Va., Sept. 29, 1871. Grad. M. D. Ky. Sch. Med. 1904. Brd. June, 1904. Elec. 1905. Mem. S. W. Va. and Lee Co. Med. Socs.

Spilman, Robert Scott, Norfolk, Norfolk Co., Va.—2.
B. Warrenton, Va., March 11, 1868. Grad. of V. M. I. Grad. M. D. Univ. and Bellevue Hosp. Med. Col., N. Y., 1899. Brd. June, 1899. Elec. 1899. Present 1898.

Spitler, Homer Amos, Middleburg, Loudoun Co., Va.—8.
B. Luray, Va., Dec. 31, 1879. Educ. Luray Gra. and W. Cent. Acads. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1903. Mem. Al. Univ. Col. Med., Richmond.

Sprinkle, George W, Marion, Smyth Co., Va.—9.
Grad. M. D. Washington Univ., Balto., Md., 1870. Elec. 1906.

Stafford, Charles Elliott, Eggleston, Giles Co., Va.—9.
B. Giles Co., Va., July 1, 1852. Educ. Preston and Olin Inst. (now Va. Poly. Inst.). Grad. M. D. Col. P. and S., Balto., 1875. Elec. 1877. Med. Ex. several L. Ins. Cos.

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Staley, Thomas Frank, Bristol, Washington Co., Va.—9.
B. Smyth Co., Va., Nov. 1, 1875. Educ. Va. Poly. Inst. and Emory and Henry Col. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1901. Present 1901. Mem. Bristol Med. Soc.; Int. U. S. Mar. Hosp., Boston, Mass., 1900, 1. Res. Phy. Retreat for Sick, Richmond, Va.

Stanley, Thomas J., Bracket, Hanover Co., Va.—3.
B. Hanover Co., Va., 1865. Educ. Guilford Col., N. C. Grad. M. D. Univ. of Md. 1889. Brd. 1890. Elec. 1904.

Staples, S. G., 2119 Calif. Avenue, Washington, D. C.
B. Stuart, W. Va., Jan. 29, 1862. Educ. Va. Agric. and Mech. Col. (now Va. Poly. Inst.), and Univ. Va. Grad. M. D. Univ. City N. Y. 1882. Post-Grad. 1883. Elec. 1891. App't'd Med. Ex. U. S. Pen. Bur. 1885. Mem. Brd. U. S. Ex. Surg., Roanoke, Va., 1891, 4. Pres. City Brd. Hlth. and City Coroner 1892-4 App't'd Quar. Surg. U. S. Pen. Bur., Washington, D. C., 1894. Mem. Med. Brd. U. S. Pen. Bur.

Stark, George W., Charlottesville, Albemarle Co., Va.—7.
B. Essex Co., Va., 1854. Grad. M. D. Washington Univ., Balto., 1877 (now Col. Phys. and Surg.). Elec. 1885. Present 1892, 4, 1908.

Starke, Edward Dabney, Norfolk, Norfolk Co., Va.—2.
B. Hanover Co., Va., 1875. Educ. Priv. Tut. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1906.

Starkweather, Carlton Lee, Occoquan, Prince William Co., Va.—8.
B. Waymart, Wayne Co., Pa., Oct. 20, 1864. Educ. Waymart Nor. Sch., Wyoming Com. Col., and has N. Y. St. Med. Student's Cert. No. 8,103. Grad. M. D. Georgetown Univ. 1898. Brd. 1899. Elec. 1899. Mem. F. & A. M., Roy. Arcan., and Loring Coun., all of N. Y. City.

St. Clair, Charles Tiffany, Tazewell, Tazewell Co., Va.—9.
B. Bluestone, Va., May 27, 1873. Educ. Emory and Henry Col. Grad. M. D. Univ. Va. 1896. Brd. June, 1896. Elec. 1898. Present 1901, 3, 4, 8. Mem. Am. Med. Assn.; of Assn. of Med. Offi. Army and Navy of Confed.; Secy. Tazewell Co. Med. Soc., and Tazewell Co. Brd. of Hlth.

St. Clair, Wade Hampton, Bluefield, Mercer Co., W. Va.
Grad. M. D. Univ. of Va. June, 1900. Brd. June, 1900. Elec. 1901.

St. John, William, Bristol, Washington Co., Va.—9.
B. Blountsville, Tenn., 1866. Educ. Jeff. Acad. Grad. M. D. Hosp. Col. of Med., Louisville, Ky., 1884. Elec. 1905. Present 1905. Mem. Tenn. Med. Soc.; of S. W. Va. Med. Soc.; of E. Tenn. Med. Soc.; and Bristol (Tenn.) Med. Soc.

Stearnes, James D., Dublin, Pulaski Co., Va.—9.
B. Pulaski, Va., 1860. Grad. M. D. Jeff. Med. Col., Pa., 1881. Elec. 1904. Post-Grad. Course Bellevue Hosp. Med. Col., N. Y.

Stearnes, John Lewis, Salem, Roanoke Co, Va.—6.
Grad. M. D. Med. Dept. of Univ. Pa. 1858. Elec. 1886.

Stephenson, Hack Urquhart, Toano, James City Co., Va.—3.
B. Berlin, Va., Nov. 5, 1872. Educ. Corinth and Richmond Col. Grad. M. D. Med. Col. Va. 1895. Brd. spring, 1895. Elec. 1898. Present 1898, 1908. Phy. Poor of James City Co. Loc. Surg C. & O. R. R.

Sterrett, James Reid, Lexington, Rockbridge Co., Va.—10.
Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908. Interne City (Richmond) Home Hosp. 1908-9.

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Stickley, Peter B., Stephen's City, Frederick Co., Va.—7.
B. Strasburg, Va., December 13, 1863. A. M. Roanoke Col. Grad. M. D. Med. Col. Va. 1893. Brd. April, 1893. Elec. 1905. Mem. Med. Soc. of Fred. and Clarke Cos.; Fred. Co. Brd. of Hlth. Med. Ex. N. Y. Mut. and Prud. L. Ins. Cos.

Stickley, Silas M., Stephen's City, Frederick Co., Va.—7.
B. Strasburg, Va. Educ. Strasburg Acad. Grad. M. D. Col. Phys. and Surg., Balto., 1879. Elec. 1894. Parish Phys. Opequon Dis., Frederick Co., Va.

Stinson, Luther Randolph, Scottsville, Albemarle Co., Va.—7.
B. Nelson Co., Va., August 25, 1879. Educ. Axtell Acad. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1903. Med. Ex. Equit. L. Assur. Soc.

Stoakley, William Stratton, Cheriton, Northampton Co., Va. Res. Hon. Mem.—1.
B. Northamp. Co., Va., Sept. 14, 1832. Educ. Priv. Inst. Grad. M. D. Jeff. Med. Col. 1851. Elec. 1873. Hon. Mem. 1906. Present 1873, 4, 5. Necrol. Com. 1874-6; Com. Nom. Applic. for Mem. 3 years. Asst. Surg. C. S. A. 1861, then Asst. Surg. C. S. N. Act. Asst. Surg. Mar. Hosp. Ser. 1886. Phys. to Almeshouse, Northampton Co., Comr. Pub. Sch. Northamp. Co. several years.

Stone, Alvah, Roanoke, Roanoke Co., Va.—6.
B. Pittsylvania Co., Va., Dec. 3, 1869. Ph. D. Louisville Med. Col. 1891. Grad. M. D. Med. Col. Va. 1892. Brd. April, 1892. Elec. 1892.

Stone, Eustace B., Roanoke, Roanoke Co., Va.—6.
B. Snowville, Va., Sept. 12, 1867. Educ. Gra. Sch. Grad. M. D. Med. Col. Va. 1893. Brd. April, 1893. Elec. 1903. Mem. Roanoke Med. Soc.

Stone, Harry Benjamin, Ashland, McDowell Co., W. Va.
B. Pittsylvania Co., Va., Feb. 2, 1879. Educ. Hampden-Sidney Col. Grad. M. D. Med. Col. Va. 1903. Brd. Va. June, 1903; of W. Va. July, 1903. Elec. 1903. Mem. McDowell Co. (W. Va.) Med. Soc.; of Soc. of Al. Med. Col. Va.

Stone, Harvey Brinton, University, Albemarle Co., Va.—7.
B. Balto., Md., 1882. A. B. Johns Hop. Univ. Grad. M. D. Johns Hop. Univ. 1906. Brd. Dec., 1907. Elec. 1908. Mem. Doctor's Club; S. W. Va. Med. Soc. Adj. Prof. Surg. & Gyn., Univ. Va. Vis. Surg. Univ. Hosp. Papers for Soc.: Treat. of Cancer, 1908; other papers, Dermoid Tumors, 1908; Study of Cancer, 1908.

Stone, Isaac Scott, 1618 R. I. Ave., N. W., Washington, D. C. Non-Res. Hon. Mem.
B. Sandy Spring, Md., March 1, 1851. Grad. M. D. Univ. Md. 1872. Elec. 1884. Att. Sess. all since, except 1892-1907. Hon. Mem. 1904. Mem. Am. Med. Assn.; So. Surg. and Gyn. Assn.; Brit. Gyn. Soc.; Roy. Soc. of Med., Great Brit.; Am. Gyn. Soc.; Med. Soc. Dist. Col.; Wash. Obstet. and Gyn. Soc. Surg. to Colum. Hosp. for Women. Prof. Clin. Gyn. and Abd. Surg. Univ. Georgetown.

Storie, Jesse G., Mortimer, Caldwell Co., N. C.
B. N. C. May 25, 1868. Educ. Cove Creek Bapt. Acad. Grad. M. D. Tenn. Med. Col. 1898. Brd. Dec., 1905. Elec. 1906. Mem. 1906. Mem. Atoka (I. Ter.) Med. Soc.

Stover, George A., South Boston, Halifax Co., Va.—6.
B. Augusta Co., Va., Nov. 20, 1873. Educ. Gra. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1900.

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Chrm. Legis. Com. 1908-9. Mem. Al. Assn. Univ. Col. Med. Res. Phys. Retreat for Sick, Richmond, 1900-1. Asst. Dem. and Instr. Anat. and Clin. Asst., Obstet., Univ. Col. Med., Richmond, 1900-1.

Stratton, Thomas E., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1863. Elec. 1887. Ex-Pres. Richmond City Brd. Hlth.

Strickland, James T., Roanoke, Roanoke Co., Va.—6.
Grad. M. D. Med. Col. Va. 1882. Elec. 1891.

Strohecker, Thomas Hamlin, Roanoke, Roanoke Co., Va.—6.
B. Charleston, S. C., 1850. Educ. Charleston Col., S. C. A. B. 1870. LL. B. 1871. Grad. M. D. N. C. Med. Col. 1902. Brd. Va. June, 1903, and of S. C. and N. C. Elec. 1904. Mem. Roanoke Co. Med. Soc.; of Am. Med. Assn. Author Treat. on Locomotor Ataxia (Tabes Dorsalis) and Treatment.

Strole, William Arthur, Norfolk, Norfolk Co., Va.—2.
B. Grove Hill, Va., June 22, 1882. Educ. Univ. Va. and Wm. and Mary Col. Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. June, 1907. Elec. 1907. Int. City (Richmond) Home 1907.

Strother, Paul Morgan, Scottsville, Albemarle Co., Va.—7.
B. Lynchburg, Va., April 29, 1884. Educ. Va. Poly. Inst. Grad. M. D. Univ. of Va. 1906. Brd. June, 1906. Elec. 1907.

Strother, William Alexander, Boonsboro, Bedford Co., Va.—6.
Grad. M. D. Univ. of Va. 1905. Brd. June, 1905. Elec. 1905.

Strother, W. J., Culpeper, Culpeper Co., Va.—8.
Grad. M. D. Med. Col. Va. 1871. Elec. 1882.

Stump, Levi Johnson, Pocahontas, Tazewell Co., Va.—9.
B. Stumptown, W. Va., Nov. 21, 1859. Educ. Nor. Sch. Grad. M. D. Med. Col. Va. 1883. Elec. 1901. Hlth. Offi. City Huntington, W. Va.

Sturgis, Robert Washington, Tanner's Creek, Norfolk Co., Va.—2.
B. Eastville, Va., Sept. 13, 1870. Educ. Wm. and Mary Col. Grad. M. D. Univ. of Md. 1896. Brd. June, 1896. Elec. 1899. Hlth. Offi. Norfolk Co.

Styll, Richard Thomas, Newport News, Warwick Co., Va. Res. Hon. Mem. —1.
B. Henrico Co., Va., Dec. 18, 1853. Educ. Strothers and Norwood's Acad., Richmond. Ph. G. Med. Col. Va. Grad. M. D. Med. Col. Va. 1877. Elec. 1878. Att. Sess. all since. Treas. 1883-1903. Hon. Mem. 1903. Phys. Rich. Smallpox and Fever Hosp. 1881; Pinel Hosp., Richmond, 1885-6. Res. Phys. 1887-1896 Hollins Inst., Va. Asst. Phy. C. St. Hosp. 1896-9. Del. Brit. Med. Assn. 1906.

Suddarth, F. S., Grafton, Taylor Co., W. Va.
B. Crabbottom, Va., Feb. 4, 1871. Grad. M. D. Univ. Va. 1897. Brd. June, 1897. Elec. 1899. Present 1899. Mem. Bath Co. Brd Hlth.

Sutherland, Edgar Lemon, Hillsville, Carroll Co., Va.—5.
B. Carroll Co., Va., Dec. 5, 1875. Educ. H. Sch. and Roanoke Col. Grad. M. D. Univ. Va. 1898. Brd. June, 1906; of W. Va. also. Elec. 1906. Present 1906. Int. Smallpox Hosp. Univ. of Va. 1897.

Swanson, William Thomas, Swansonville, Pittsylvania Co., Va.—5.
B. Callands, Va. Educ. Va. Agric. and Mech. Inst., Blacksburg, Va. Grad. M. D. Col. P. and S., Balto., 1877. Elec. 1901.

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Swimley, Asbury Carlton, Winchester, Frederick Co., Va.—7.
B. Forest, Ohio, June 17, 1879. Educ. H. Sch. and Col. of Phar. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908.

Switzer, Bernard W., Mount Crawford, Rockingham Co., Va.—7.
B. Mt. Crawford, Va., Aug. 20, 1869. B. S. Grad. M. D. Col. P. and S., Balto., 1893. Brd. April, 1893. Elec. 1896. Master Mason. Mem. Rockingham Co. Med. Soc.

Sycle, Moses C., Richmond, Henrico Co., Va.—3.
B. Richmond, Va. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1905. Elec. 1905.

Sykes, Joseph H. M., Capron, Southampton Co., Va. Res. Hon Mem.—2.
B. Southampton Co., Va., Aug. 25, 1834. Educ. Green Plain Acad. Stud. Med. Univ. Va., then Jeff. Med. Col., from which 250 students seceded on account of John Brown insurrection, 1861. Grad. M. D. Med. Col. Va. 1861. Elec. 1882. Hon. Mem. 1906. Present 1883-9. Frat. Del. N. C. Med. Soc. Asst. Surg. 3d Va. Reg., Kemper's Brig., Pickett's Div., C. S. A.

Tabb, Henry Cabell, Richmond, Henrico Co., Va. Founder. Res. Hon. Mem.—3.
B. Richmond, Va., March 3, 1839. Educ. Priv. Tut. and Richmond Col. Grad. M. D. Med. Col. Va. 1860. Charter Mem. 1870. Elec. Hon. Mem. 1904. Med. Dir. L. Ins. Co. of Va. Pres. Med. Dirs. Assn. of U. S. and Can. Ex-Pres. Al. Assn. Med. Col. Va. Med. Ex. Trav. L., Union Cent. Ins. Cos. Surg. Va. Artil. Bat. Assn.

Tabor, Sidney Johnson, Roanoke, Roanoke Co., Va.—6.
B. Bluestone, Tazewell Co., Va., 1868. Grad. M. D. Univ. of Nashville and Vanderbilt Univ. 1892. Brd. 1892. Elec. 1894.

Talbot, Robert Slaughter, Lynchburg, Campbell Co., Va.—6.
B. Bedford Co., Va., Sept. 12, 1877. Educ. New London Acad., Bedford Co., Va. Grad. M. D. Med. Col. Va. 1902. Brd. June, 1902. Elec. 1903.

Talbott, T. Melville, Falls Church, Fairfax Co., Va.—8.
Grad. M. D. Univ. Md. 1870. Elec. 1891.

Taliaferro, B. Lawrence, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Aug. 15, 1877. Educ. Richmond Pub. Schs. Grad. High Sch. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1897. Elec. 1899. Present 1899, 1902, 3, 4, 8. Mem. Al. Assn. Med. Col. Va. Res. Phys. Old Dom. Hosp. 1898-9. Mem. Rich. Acad. of Med. and Surg.; of Am. Med. Assn.; Phy. Mem. Hosp., Richmond; Lect. Urin. and Clin. Asst. to Chair Pract. of Med., Med. Col. Va.

Taliaferro, Edward Carrington Stanard, Norfolk, Norfolk Co., Va.—2.
B. Gloucester Co., Va., Dec. 17, 1874. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1898. Brd. fall, 1899. Elec. 1900. Present 1900. House Phys. St. Vincent's Hosp. 1899.

Taliaferro, R. Lee, Madison Mills, Madison Co., Va.—7.
Grad. M. D. Univ. of Md. 1893. Brd. 1893. Elec. 1893.

Taliaferro, Robert Milton, Lynchburg, Campbell Co., Va.—6.
B. Sandiges, Va. Educ. Lynchburg High Sch. Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1898. Sen. Res. Phy. Retreat for Sick, Richmond, Va

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Talley, Jr., Daniel Dee, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., June 25, 1882. B. A. of Univ. of Va. Grad. M. D. Med. Col. Va. 1906. Brd. Dec., 1906. Elec. 1907. Mem. Adj. Fac. of Med. Col. Va.

Tankard, James William, Lillian, Northumberland Co., Va.—1.
B. Northampton Co., Va., June 9, 1846. Educ. Priv. Schs., Margaret Acad. Va. Grad. M. D. Washington Univ. (now Col. Phys. and Surg), Balto., 1869. Elec. 1888. Present 1888, 9. Mem. Med. Ex. Brd. Va. 1888-1892. Re-elec. 1892. Papers, Case of Triple Birth with Complications, June, 1878; Chloral in Tetanus, Dec., 1880.

Tatum, Benjamin Harris, Clifton Forge, Alleghany Co., Va.—10.
Grad. M. D. Univ. Med., Balto., 1891. Brd. 1891. Elec. 1902.

Tatum, Benton F., Stuart, Patrick Co., Va.—5.
B. Patrick Co., Va., Oct. 18, 1871. Educ. So. Bus. Univ., Lynchburg, Va. Grad. M. D. Univ. of South, Tenn., 1901. Brd. Dec., 1901. Elec. 1902. Present 1903. Ex-Secy. and Treas. Patrick-Henry Med. Soc. and Pres. 1907-8; Secty. Patrick Co. Brd. of Hlth.; Co. Coroner; Prof. Obs. and Dis. of Child., Mother's Home Train. Sch. for Nurses. Papers, Puerperal Sepsis; Diarrhoea and Dysentery, Typhoid Fever.

Taylor, Hugh McGuire, Richmond, Henrico Co., Va.—3.
B. Clarke Co., Va., 1855. Educ. Va. Mil. Inst. Grad. M. D. Med. Col. Va. 1876. Elec. 1878. Att. Sess. most of them since. Mem. Am. Med. Assn. S. Surg. and Gyn. Assn.; Nat. Assn. R. R. Surg.; Ex-Pres. Richmond Acad. Med. and Surg.; Prof. Prac. of Surg. and Clin. Surg. Univ. Col. Med., Richmond.; Surg. Va. Hosp.

Taylor, Joseph Edward, Ringgold, Pittsylvania Co., Va.—5.
B. Richmond, Va. Educ. Priv. Schls. and Richmond Col. Grad. M. D. Med. Col. Va. 1892. Brd. 1893. Elec. 1894. Present 1894, 8. Mem. Al. Assn. Med. Col. Va. Res. Phys. Richmond City Almshouse 1892.

Taylor, Lewis Harvie, Geo. Washington Univ. Hospital, Washington, D. C.
Grad. M. D. Columbian Univ., D. C., 1903. Brd. June, 1903. Elec. 1904.

Taylor, Philip, Richmond, Henrico Co., Va.—3.
B. New York, N. Y. Grad. M. D. Col. Phys. and Surg., N. Y. City, 1876. Elec. 1882. Att. Sess. nine. Mem. (and Secy. 1881, 3) Richmond Acad. Med. and Surg. Papers for Soc: Advances in Ophthalmology and Otology, 1885; Some Ocular Diseases in Children, 1892.

Taylor, Thomas James, Cochran, Brunswick Co., Va. Founder. Res. Hon. Mem—4.
B. Brunswick Co., Va., 1837. Educ. Randolph-Macon Col., Univ. Va. Grad. M. D. Univ. City N. Y. 1860. Charter Mem. 1870. Hon. Mem. 1904. Att. Sess. 1870, and seven others. V.-Pres. twice. Ex-Mem. Med. Ex. Brd. Va. Capt. 56th Va. Regt., C. S. A.; Asst. Surg. C. S. A.; Surg. Young's Brig. Cav., C. S. A.

Taylor, Thomas M., Hewletts, Hanover Co., Va.—3.
B. Richmond, Va., Aug. 19, 1877. Educ. Richmond Col. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec. 1900. Ex. Mut. L. Ins. Co., of N. Y. Asst. Quar. Offi. Newport News, Va., 1898, 9.

Taylor, T. T., Atlantic, Accomac Co., Va.—1.
Grad. M. D. Col. Phy. and Surg., Balto., Md., 1878. Elec. 1886.

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Taylor, Wm. H., Richmond, Henrico Co., Va. Founder. Res. Hon. Mem.—3.
Charter Mem. 1870. Hon. Mem. 1904. State Chemist. Coroner of Richmond. Prof. Chem. Med. Col. Va., and in Richmond High School.

Tennant, Charles Colville, Charlottesville, Albemarle Co., Va.—7.
Grad. M. D. Univ. Va. 1904. Brd. Dec., 1907. Elec. 1908. Mem. Pied. Med. Soc.

Terrell, Alexander Watkins, Lynchburg, Campbell Co., Va.—6.
B. Campbell Co., Va. Educ. Randolph-Macon Col., Univ. Va. Grad. M. D. Hosp. Col. Med., Louisville, 1886. Brd. 1886. Elec. 1887. Present 1889.

Terrell, Charles James, Hewletts, Hanover Co., Va.—3.
Grad. M. D. Phila. Col. of Med. 1856. Elec. 1905.

Terrell, Emmett H., 315 E. Grace Street, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. May. 1900. Brd. June, 1900. Elec. 1901.

Terrell, John J., R. F. D., Lynchburg, Campbell Co., Va.—6.
B. Henry Co., Va., August 18, 1829. Educ. Emory and Henry Col. Grad. M. D. Jeff. Med. Col., Phila., 1853. Elec. 1901. Present 1891, 1901, 3. Mem. Brd. of Hlth. Campbell Co., Va.

Terrell, Thomas K., R. F. D., Lynchburg, Campbell Co., Va.—6.
B. Burton's Creek, Va., July 10, 1869. Educ. New London Acad. and Univ. of Va. Grad. M. D. Univ. of Va. 1895. Brd. 1895. Elec. 1901.

Terril, E. A., Frederick Hall, Louisa Co., Va.—8.
Grad. M. D. Med. Col. Va. 1884. Elec. 1886.

Teusler, Rudolph B., Tokio, Japan.
Grad. M. D. Med. Col. Va. 1894. Brd. April, 1894. Elec. 1894. Present 1894.

Thomas, Charles Walter, Simpson, Floyd Co., Va.—5.
B. Patrick Co., Va., April 21, 1876. Educ. Mountain Nor. and Stuart Nor. Cols. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1903.

Thomas, Edward A., Wytheville, Wythe Co., Va.—9.
Grad. M. D. Univ. Va. 1890. Brd. 1891. Elec. 1904.

Thomas, Ira Hamilton, Aldie, Loudoun Co., Va.—8.
B. Loudoun Co., Va., 1855. Educ. Pub. Sch. Grad. M. D. Univ. of Md. 1883. Elec. 1899.

Thomas, William Hall, Steele's Tavern, Augusta Co., Va.—10.
B. Steele's Tavern, Va., Aug. 16, 1858. Prac. Med. before Grad. Grad. M. D. Balto. Med. Col. 1889. Elec. 1890. Present 1890.

Thomasson, Dennie M., Lynchburg, Campbell Co., Va.—6.
B. Charlottesvlile, Va., May 29, 1878. Educ. Charlottesville High School and Univ. of Va. Grad. M. D. Univ. of Va. 1900. Brd. June, 1900. Elec. 1903. Present 1903.

Thompson, James Henry, Boissevain, Tazewell Co., Va.—9.
B. Watsonville, Calif., Aug. 4, 1882. B. A. King Col., Tenn. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908. Mem. Tazewell Co. Med. Soc.

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Thompson, William M., Stevensburg, Culpeper Co., Va.—8.
B. Gogginsville, Va., Dec. 23, 1869. Educ. Mountain View Nor. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec. 1903. Ex. Equit., N. Y., and Mut. L. Ins. Cos.

Thornhill, Wm. B., Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Hosp. Col. Med., Louisville, 1886. Elec. 1888.

Thrift, Ernest McCue, Madison, Madison Co., Va.—7.
B. Madison, Va., Aug. 19, 1873. Educ. High Sch. and Augusta Mil. Acad. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec. 1906. Mem. Pied. Med. Soc.

Thurman, Allen Granberry, Chamblissburg, Bedford Co., Va.—6.
Grad. M. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1903.

Thurman, F. L., Keswick, Albemarle Co., Va.—7.
Grad. M. D. Univ. of Va. 1894. Brd. 1894. Elec. 1897.

Tiffany, Louis McLane, 831 Park Ave., Baltimore, Md. Non-Res. Hon. Mem.
B. Balto., Md., 1844. A. M. Cambridge Univ. Grad. M. D. Univ. of Md. 1868. Elec. Non-Res. Hon. Mem. 1897. Prof. Clin. Surg., Univ. of Md. Surg.-in-Chief St. Joseph's Hosp., Balto. Ex-Pres. Am. Surg. Assn. Ex-Pres. So. Surg. and Gyn. Assn.

Tilman, Julian E., Rock Castle, Powhatan Co., Va.—3.
Grad. M. D. Med. Col. Va. 1900. Brd. June, 1901. Elec. 1908.

Tinsley, Edward Oscar, Airpoint, Roanoke Co., Va.—6.
B. Franklin Co., Va., Feb. 7, 1868. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1897. Brd. Sept., 1897. Elec. 1903.

Tipton, John A., Hillsville, Carroll Co., Va.—5.
B. Hillsville, Va. Grad. M. D. Bellevue Hosp. Med. Col. 1879. Elec. 1885. Present 1885, 7, 8, 9, 1890, 1, 4, 7, 8.

Tompkins, Christopher, Richmond, Henrico Co., Va. Founder. Res. Hon. Mem.—3.
Charter Mem. 1870. Hon. Mem. 1904. Dean and Prof. Obs. Med. Col. Va.

Tompkins, Edmund Lee, Finecreek Mills, Powhatan Co., Va.—4.
B. Nov. 18, 1862, Richmond, Va. Educ. Grad. in French, Ger. and Chem. Univ. Va. Grad. M. D. Univ. Va. 1885. Brd. Dec., 1899. Elec. 1891. Present 1908. Mem. Med. Assn., D. C.; Ex-H. Surg. Post-Grad. Hosp., N. Y. City. Ex-Prof. Nerv. Dis. Columb. Univ., D. C.; Phy. to Emerg. Hosp., D. C.; Coroner and Mem. Brd. Hlth., Powhatan Co.

Tompkins, Edmund Pendleton, Roanoke, Roanoke Co., Va.—6.
B. Lexington, Va., July 22, 1868. Educ. Priv. Tut. and Wash. and Lee Univ. Grad. M. D. Med. Col. Va. 1897. Brd. Sept., 1896. Elec. 1897. Present 1896-1901, 3, 6. Mem. S. W. Va. Med. Soc.; Ex-Mem. Brd. of Hlth. Rockbridge Co., Va. Papers for Soc., Sterility—Its Causes and Treatment, 1904; other papers, Diaphoresis in Pneumonia, 1898.

Tompkins, George J., Lynchburg, Campbell Co., Va.—6.
B. Lexington, Va., March 27, 1873. Grad. M. D. Med. Col. Va. April 3, 1894. Brd. April, 1894. Elec. 1894. Res. Phys. Hammond Sanit., D. C., 1894. Prac. limited to Dis. Eye, Ear, Nose and Throat.

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Tompkins, George Wythe, Coeburn, Wise Co., Va.—9.
B. Sept. 9, 1872. Grad. M. D. Univ. of Va. June, 1896. Brd. Sept., 1896. Elec. 1897. Present 1898.

Tompkins, James Edward, Fredericksburg, Spotsylvania Co., Va.—1.
B. Spotsylvania Co., Va., November 24, 1867. B. A. Richmond Col. 1888. Grad. M. D. Univ. of Md. 1891. Brd. April, 1891. Elec. 1891. Present 1891, 2, 3, 6, 8.

Tompkins, James McCaw, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., April 16, 1883. B. A. Univ. of Va. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907. Instr. Mat. Med. and Ther., and Lect. on Diet, Med. Col. Va.

Trant, James Gordon, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., March 7, 1881. Educ. L. S. Squire's Eng. Class. Sch., Richmond. Grad. M. D. Med. Col. Va. 1906. Brd. June, 1906. Elec. 1907. Mem. Al. Assn. Med. Col. Va.; of Church Hill (Richmond) Med. Soc.

Traynham, Benjamin Lanier, Sweet Chalybeate, Alleghany Co., Va.—10.
B. Harmony, Halifax Co., Va. Educ. Randolph-Macon Col. and Va. Mil. Inst. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. Dec., 1903. Elec. 1904.

Treakle, Henry Benjamin, White Stone, Lancaster Co., Va.—1.
B. Treakles, Lancaster Co., Va., March 24, 1874. Educ. Chesapeake Acad. and Wm. and Mary Col. Grad. M. D. Univ. of Balto., 1893. Brd. April, 1894. Elec. 1898. Med. Ex. N. Y. L. Ins. Co.

Trent, Joseph Peterfield, Clinchport, Scott Co., Va.—9.
Grad. M. D. Geo. Washington Univ., D. C., 1906. Brd. June, 1906. Elec. 1906.

Trevillian, John Guerrant, Richmond, Henrico Co., Va. Res. Hon. Mem.—3.
B. Goochland Co., Va., April 1, 1840. Educ. Hampden-Sidney Col. and Univ. of Va. Grad. M. D. Med. Col. Va. 1861. Elec. 1875. Hon. Mem. 1906. Att. Sess. all in Richmond. Mem. Richmond Acad. Med. and Surg., and Pickett's Camp Con. Vet.; Surg. C. S. A. in Hosp. in Richmond, Warrenton and Winchester until Jan., 1863; then Pickett's Div. in field; Surg. Richmond City Almshouse.

Trice, Dabney Minor, Charlottesville, Albemarle Co., Va.—7.
B. Charlottesville, Va., Sept. 22, 1860. Educ. Priv. Sch. Grad. M. D. Hosp. Col. of Med. 1890. Brd. 1901. Elec. 1905. Present 1905. Mem. Ky. State Med. Soc.

Trigg, Jr., Daniel, Johnson City, Washington Co., Tenn.
Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1903. Res. Phy. Mem. Hosp. (Richmond, Va.) 1903, 4.

Trimble, Kenton Harper, Monterey, Highland Co., Va.—10.
B. Monterey Dec. 23, 1858. Educ. Monterey Acad. Grad. M. D. Univ. of Va. 1884 and Bellevue Hosp. Med. Col., N. Y., 1885. Brd. 1885. Elec. 1901.

Trout, Hugh Henry, Roanoke, Roanoke Co., Va.—6.
B. Staunton, Va., June 8, 1878. Educ. Epis. High Sch. and Univ. Va. Grad. M. D. Univ. Va. 1902. Brd. June, 1902. Elec. 1905. Present 1905, 8. Asst. Johns Hopkins Hosp. Dis.; Res. Phy. St. Joseph's Hosp. (1903) and Union Prot. Inf. (1905).

Truett, E. F., Berkley, Norfolk Co., Va.—2.
Grad. M. D. Col. Phys. and Surg., Balto., 1883. Elec. 1888.

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Tucker, Beverley Randolph, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., April 26, 1874. Educ. Richmond High Sch. and Va. Mil. Inst. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1907. Present 1907, 8. Mem. Adj. Fac. Med. Col. Va. Papers, Dislocation of Eye Balls, 1907; Cerebro-Spinal Syphilis, 1907.

Tucker, Charles Clifton, Blackstone, Nottoway Co., Va.—4.
B. Nottoway Co., Va., March 17, 1875. Educ. Hoge Acad., Blackstone, Va. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1903. Res. Phy. Roanoke Hosp. 1903, 4.

Tucker, Charles Wiley, Drakes Branch, Charlotte Co., Va.—6.
B. Lowesville, Va., Oct. 21, 1876. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1903. Elec. 1903.

Tucker, Pitt Edward, Goshen, Rockbridge Co., Va.—10.
B. Nelson Co., Va., 1870. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1902. Present 1902, 8.

Tucker, Robert Daniel, Powhatan, Powhatan Co., Va.—4.
B. Powhatan Co., Va., March 30, 1861. M. A. Richmond Col. 1887. Grad. M. D. Med. Dept. Columbian Univ., Washington, D. C., 1892. Brd. 1894. Elec. 1894. Present 1894, 8, 9, 1902, 8. Pres. Co. Brd. Hlth. Chr. Brd. Supervisors since 1899. Med. Ex. Equit., Ger., N. Y. and So. Atlantic L. Ins. Cos.

Tullos, William Rodhan, Haymarket, Prince William Co., Va.—8.
B. Bristerburg, Fauquier Co., Va., April 13, 1859. Educ. Va. Agric. and Mech. Col., Blacksburg, Va. Grad. M. D. Col. Phys. and Surg., Balto., 1884. Elec. 1886. Present 1886, 9.

Tunstall, W. Massie, Lovingston, Nelson Co., Va.—10.
B. Lynchburg, Va., Sept. 21, 1869. Educ. Lynchburg Schools and Mt. Welcome, Va., High Sch. Grad. M. D. Univ. City, N. Y., 1891. Brd. 1891. Elec. 1891. Present 1891. Ex. Equit. L. Ins. Co., N. Y.

Turman, Alexander Emmett, Richmond, Henrico Co., Va.—3.
B. Carroll Co., Va., May 6, 1869. Educ. Floyd Acad. and Mountain Nor. Va. Grad. M. D. Med. Col. Va. 1893. Brd. April, 1893. Elec. 1894. Present 1894, 8, 9, 1901, 4, 8. Ex-Res. Phy. City (Richmond) Almshouse; Surg. to State Farm, 1894-1902. Mem. Am. Med. Assn.; Med. Ex. N. Y. Mut. L. Ins. Co.; Ex-Mem. Goochland Co. Brd. Hlth.

Turman, George Fugett, Willis, Floyd Co., Va.—5.
B. Indian Valley, Va., Jan. 29, 1883. Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1905. Mem. Am. Med. Assn.

Turnbull, Edward Randolph, Lawrenceville, Brunswick Co., Va.—4.
B. Brunswick Co., Va., Dec. 9, 1856. Grad. M. D. Univ. Va. 1884. Att. Poly. winters of 1885, 6. Elec. 1892.

Turner, Charles B., Bluemont, Loudoun Co., Va.—8.
B. Charleston, Jefferson Co., Va. (now W. Va.), 1858. Educ. Charlestown Acad. Grad. M. D. Univ. Louisville, Ky., 1881. Elec. 1884. Present 1884, 8, 1890. Ex. L. Ins. Cos. Mem. Am. Med. Assn.; Surg. So. Ry. Co. Papers, Abortion.

Turner, David Oliver, Turner, Brunswick Co., Va.—4.
B. Lunenburg Co., Va., Feb. 3, 1855. Educ. Priv. Sch. Lunenburg Co. Grad. M. D. Col. of Phy. and Surg., Balto., Md., 1880. Elec. 1902.

Turner, Edwin Poral, Fergusson's Wharf, Isle of Wight Co., Va.—2.
Grad. M. D. Univ. of Md. 1885. Brd. 1886. Elec. 1905.

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Turner, John Daniel, Lanexa, New Kent Co., Va.—3.
Grad. M. D. Jeff. Med. Col., Phila., 1858. Elec. 1904.

Turner, Wm. D., Simthfield, Isle of Wight Co., Va.—2.
Elec. 1882.

Tuttle, John Brooks, Craigsville, Augusta Co., Va.—10.
B. Barterbrook, Va., Sept. 27, 1872. Educ. various Schs. and Cols.—last A. M. A., Ft. Defiance, Va. Grad. M. D. Univ. of Va. 1896. Brd. Sept., 1896. Elec. 1902.

Tutwiler, Herman L., Roderfield, McDowell Co., W. Va.
Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1900.

Twyman, David Nical, Appomattox, Appomattox Co., Va.—10.
B. Madison Co., Va., May 8, 1877. Educ. Va. Poly. Inst. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1905.

Twyman, Edwin Wm., Twyman's Mill, Madison Co., Va.—7.
B. Madison Co., Va., Oct. 3, 1853. Educ. Locust Dale Acad., Randolph-Macon Col. Grad. M. D. Ky. Sch. Med. 1875. Elec. 1884. Att. Sess. two.

Tynes, Achilles Lyons, Staunton, Augusta Co., Va.—10.
B. Tazewell, Va., March 11, 1873. Educ. Hampden-Sidney Col. Grad. M. D. Univ. Col. Med. 1898. Brd. June, 1898. Elec. 1899. Present 1899, 1908. Mem. Augusta Co. Med. Soc.

Updike, C. F., Browntown, Warren Co., Va.—7.
Grad. M. D. Univ. of Md. May, 1889. Brd. ——. Elec. 1896.

Upshur, Francis Whittle, Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Dec. 4, 1874. Educ. McGuire's Sch. and Richmond Col. Grad. M. D. Med. Col. of Va. 1897. Brd. June, 1898. Elec. 1899. Present 1899, 1908. Mem. Richmond Acad. of Med. and Surg. Act. Asst. Surg. U. S. Mar. Hosp., Boston, Mass., 1897-8. Inst. Prac. of Med., Med. Col. Va., 1898-9; Dem. Histol. 1900-1; Dem. and Inst. Path. and Lect. on Hyg., Univ. Col. Med., 1901-2.

Upshur, John Nottingham, Richmond, Henrico Co., Va. Res. Hon. Mem. Founder.—3.
B. Norfolk, Va., Feb. 14, 1848. Educ. Va. Mil. Inst. Grad. M. D. Med. Col. Va. 1868. Chart. Mem. 1870. Att. Sess. most of them . Pres. 1902-3. Hon. Mem. 1903. Prof. Mat. Med. and Ther. 1884-1894; Clin. Lect. Dis. Wom. and Child. 1884-1893; Prac. of Med., 1894, Med. Col. Va. Emer. Prof. 1899. Orator New Market Bat., 1903; Mem. Brd. Vis. Va. Mil. Inst. 1903-6.

Vaden, Arthur Grayson, Mathews, Mathews Co., Va.—1.
B. Halifax Co., Va., May 23, 1873. Educ. Chesapeake Acad., Irvington, Va., and Onancock (Va.) Acad. Grad. M. D. Univ. Col. Med., Richmond, 1895. Brd. June, 1895. Elec. 1897. Res. Phys. Va. Hosp., Richmond, 1894, 5.

Vaden, Garland M., Capeville, Northampton Co., Va.—1.
B. Mathews C. H., Va., 1878. Educ. Chesapeake Acad. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. June, 1902. Elec. 1902. Present 1902.

Vaiden, Cowles M., Ruthville, Charles City Co., Va.—3.
Grad. M. D. Med. Col. Va. 1892. Brd. fall 1891. Elec. 1897. Present 1898.

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Valentine, Thomas Henry, Vultare, Northampton Co., N. C.
B. Brunswick Co., Va., Feb. 25, 1879. Educ. Randolph-Macon Acad. and Col. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. June, 1901. Elec. 1901.

Valz, Edward Victor, U. S. N. Med. School Hosp., Washington, D. C.
B. Balto., Md., Dec. 5, 1878. Educ. Epis. H. Sch. Va. Grad. M. D. Univ. of Va. 1903. Brd. June, 1903. Elec. 1906.

Vance, Charles R., Norfolk, Norfolk Co., Va.—2.
B. Gate City, Va., Oct. 1, 1867. B. A. King Col., Bristol, Tenn. Grad. M. D. Univ. of Va. 1891. Brd. April, 1892. Elec. 1900. Mem. Norfolk Med. Soc.; of Sea. Med. Soc. Quar. Off. Eliz. River, Va., Dist.

Vander Hoof, Douglas, Richmond, Henrico Co., Va.—3.
B. Brooklyn, N. Y., Dec. 31, 1879. B. L. Dartmouth Col. 1901 and A. M. (Hon.) 1907. Grad. M. D. Johns Hopkins Univ. 1905. Brd. Dec., 1906. Elec. 1907. Present 1907, 8. Mem. Richmond Acad. of Med. and Surg.; Am. Med. Assn.; Tri-St. Med. Soc.; Adj. Prof. Med. and Lect. Phy. Diag. Med. Col. Va.; Att. Phy. Mem. Hosp.

Vanderslice, George Keesee, Phoebus, Elizabeth City Co., Va.—1.
B. Henrico Co., Va., 1870. Educ. McCabe's, Petersburg, Va. Grad. M. D. Univ. of Va. June, 1892. Brd. Sept., 1892. Elec. 1894.

Vaughan, George Tully, U. S. M. H. Ser., Washington, D. C. Non-Res. Hon. Mem.
B. Nelson Co., Va., June 27, 1859. Educ. Priv. Sch. and Kenmore Univ. H. Sch., Va. Grad. M. D. Univ. Va. 1879; Bellevue Hosp. Med. Col., N. Y., 1880. Elec. 1882. Hon. Mem. 1905. Present 1884, 1891, 1901-2-4-5-6-8. Surg. Clin. in Berlin, Leipsic, Dresden, Prague, Vienna, Padua, Paris and London, and Jeff. Med. Col., Phila. Brig. Surg. U. S. Vol. Sp.-Amer. War. Prof. Surg. Georgetown Univ., D. C.

Vaughan, James E., Lynchburg, Campbell Co., Va.—6.
B. Nov. 7, 1859. Educ. Elks Creek Acad. and Emory and Henry Col. Att. Lect. Col. Phy. and Surg., Balto., Md. Grad. M. D. Tenn. Med. Col. 1893. Pract. Med. prior to Ex. Brd. Elec. 1906. Mem. Lynchburg Acad. of Med. Med. Ex. for L. Ins. Co. of Va.

Vaughan, L. O., Waverly, Sussex Co., Va.—4.
Grad. M. D. Med. Col. Va. 1904. Brd. June, 1904. Elec. 1906.

Vaughan, W. A., Timberville, Rockingham Co., Va.—7.
B. Rockingham Co., Va., March 16, 1860. Educ. Richmond Col. Va. Grad. M. D. Jeff. Med. Col., Phila., 1884. Elec. 1885. Present 1889, 1891. Surg. B. & O. Ry. Prize for best essay on "Cancer of the Breast" by Faculty of Jeff. Med. Col., 1884.

Venable, Charles Scott, San Antonio, Bexar Co., Tex.
B. Charlottesville, Va., June 13, 1877. Educ. Univ. of Va. and Univ. of N. C. Grad. M. D. Univ. of Va. 1900. Elec. 1902. Mem. Charlottesville Med. Soc.

Vest, William Waller, Clarksville, Mecklenburg Co., Va.—4.
B. Williamsburg, Va., July 11, 1872. Educ. Priv. Sch. and Va. Mil. Inst. Grad. M. D. Med. Col. Va. 1900. Brd. June, 1900. Elec. 1903. Mem. Alum. Assn. Med. Col. Va. Med. Ex. for S. Atlantic and N. Y. Mut. L. Ins. Cos.

Via, Cary Elphus, Bena, Gloucester Co., Va.—1.
B. Scottsville, Va., Oct. 21, 1882. Educ. Newport News H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1903. Brd. June, 1903. Elec. 1904.

Voorhees, F. F., Amherst, Amherst Co., Va.—10.
Grad. M. D. Bellevue Hosp. Med. Col. 1870. Elec. 1894.

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Wagner, Isaac Roy, Chesterfield, Chesterfield Co., S. C.
B. Highland Co., Va., 1878. B. S. Grad. M. D. Univ. of Va. 1904. Brd. Dec., 1904. Elec. 1906. Present 1906. Mem. Pied. Med. Soc.; of Chesterfield Co. (S. C.) Med. Soc.; of S. C. St. Med. Soc.

Waldron, John William, Grundy, Buchanan Co., Va.—9.
B. Tazewell Co., Va., Nov. 14, 1852. Educ. Tazewell H. Sch. Att. Louisville Med. Col. 1884, 5. U. S. Pen. Ex. 1890, 3. Elec. Mem. 1904.

Walker, Emmette Edward, Pamplin City, Appomattox Co., Va.—10.
B. Mecklenburg Co., Va., 1870. Educ. McCabe's Sch. and Randolph-Macon Col. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. Aug., 1900. Elec. 1901. Mem. Am. Phar. Assn.; Asst. Dem. in Phar. Chem. Univ. Col. Med., Richmond; Ph. D., 1898.

Walker, James Taylor, Barboursville, Orange Co., Va.—8.
Grad. M. D. Col. Phys. and Surg., Balto., 1886. Elec. 1897.

Walker, John, Lynchburg, Campbell Co., Va.—6.
B. Goochland Co., Va., July 1, 1867. Educ. Lynchburg H. Sch. Grad. M. D. Univ. Md. 1891. Brd. April, 1891. Elec. 1891. Present 1891, 2, 1908. Dist. Surg. C. & O. Ry. Co.

Walker, Landon Davies, R. F. D., Spout Spring, Appomattox Co., Va.—10.
B. Middlesex Co., Va., June 24, 1883. Grad. M. D. Med. Col. Va. 1908. Brd. June, 1908. Elec. 1908. Present 1908.

Walker, M. M., Montross, Westmoreland Co., Va. Founder. Res. Hon. Mem.—1.
B. Westmoreland Co., Va. Educ. Priv. Sch. Northern Neck, Va. Grad. M. D. Univ. Md. 1867. Brd. June, 1903. Char. Mem. 1870. Hon. Mem. 1904. Att. Sess. 1870 to 1882, when he left Va. Mem. Com. Nom. App. 1872-9. Cor. Secy. 1880-2. Mem. Am. Med. Assn. Author Circular urging doctors to influence legislators to establish Med. Ex. Brd. Va. Med. Corps U. S. A. Span.-Amer. War.

Walkup, Arthur, M., Gala, Botetourt Co., Va.—10.
B. Botetourt Co., Va. Grad. M. D. Col. Phys. and Surg., Balto., 1880. Elec. 1891. Att. Sess. two.

Wall, Harry, Norfolk, Norfolk Co., Va.—2.
B. Winchester, Va., 1880. Grad. M. D. Univ. Va. 1904. Brd. Dec., 1905. Elec. 1908. Mem. Norfolk Med. Soc.

Wallace, A. McGarvey, Gate City, Scott Co., Va.—9.
Grad. M. D. Louisville Med. Col. 1903. Brd. June, 1904. Elec. 1904.

Wallace, J. W., Covington, Alleghany Co., Va.—10.
B. Bath Co., Va., 1867. Educ. Agric. and Mech. Col., Blacksburg, Va. Grad. M. D. Univ. Md. Sch. Med. 1891. Brd. April, 1891. Elec. 1891.

Wallace, Miles Coleman, Gate City, Scott Co., Va.—9.
Prac. prior to State Ex. Brd. Elec. Mem. 1905.

Wallace, Wesley H., 196 Prospect Park, W., Brooklyn, N. Y.
B. New York 1868. Grad. M. D. Med. Col. Va. 1899. Brd. June, 1899. Elec. 1902. Secy. Co. (Pr. Geo.) Brd. of Hlth.

Waller, George Edmund, Martinsville, Henry Co., Va.—5.
B. Henry Co., Va., Oct. 17, 1838. Grad. M. D. Med. Col. Va. 1861. Elec. 1905. Mem. Patrick-Henry Med. Soc. Hlth. Off. Martinsville, Va.; Surg. to Smallpox Inf.

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Walton, John C., Richmond, Henrico Co., Va.—3.
B. Caswell, N. C., August 19, 1855. Educ. Chester Springs, Va. Grad. M. D. Louisville Med. Col. 1878. Brd. Dec., 1901. Elec. 1903. Present 1903, 4, 5, 6, 7, 8. Mem. N. C. Med. Soc.; of S. Pied. Med. Soc.; of Am. Med. Assn.; of Tri-State Med. Soc.; of Assn. of So. Ry. Surgs.; Ex-Mem. N. C. State Brd. of Med. Exam.; Phy. in Charge Hydro-Electro-Ther. Sanat., Richmond, 1908-9; Neurol. So. Ry.

Ward, Julian F., Winchester, Frederick Co., Va.—7.
B. Winchester, Va., March 11, 1851. Educ. Shen. Val. Acad. Grad. M. D. Univ. Va. 1877. Elec. 1908. Mem. B. & O. Assn. Ry. Surg.

Ward, William Lipscomb, Moonlight, Isle of Wight Co., Va.—2.
Grad. M. D. Col. Phy. and Surg., Baltimore, Md., 1891. Brd. 1891. Elec. 1905.

Ware, Reuben B., Lowesville Amherst Co., Va.—10.
Grad. M. D. Med. Col. Va. 1895. Brd. 1895. Elec. 1896.

Warfield, Walter Adgate, Alexandria, Alexandria Co., Va.—8.
B. Alexandria, Va., Feb. 4, 1883. Ph. G. Grad. M. D. Univ. of South 1905. Brd. Dec., 1905. Elec. 1906.

Warinner, Junius Ernest, R. F. D. 7, Richmond, Henrico Co., Va.—3.
B. Charles City Co., Va., Nov. 19, 1860. Educ. Va. Agric. and Mech. Col. Grad. M. D. Med. Col. Va. 1884. Elec. 1885. Present 1885, 6, 7, 8, 1890, 2, 4, 7, 8, 9, 1901, 2, 8. Med. Equit. L. Assn.; of Royal Arcanum. Mem. Med. Ex. Brd. Va.

Warner, A. Rowland, 1731 Francis Street, Philadelphia, Pa.
B. Philadelphia, Pa., July 18, 1875. Educ. Gettysburg Col. Grad. M. D. Univ. Pa. 1898. Brd. Dec., 1901. Elec. 1906. Mem. Richmond Acad. Med. and Surg.

Warrick, Francis Keene Travers, Richmond, Henrico Co., Va.—3.
B. Glassboro, N. J., 1878. Educ. Lawrenceville School. Grad. M. D. Univ. of Pa. 1901. Brd. Dec., 1901. Elec. 1904. Asso. Mem. Chas. K. Mills Neurolog. Soc.

Warriner, Benjamin B., Infanta, Toyabos Prov., P. I.
B. Burkeville, Va., Nov. 12, 1873. Educ. Homestead Acad., Randolph-Macon Acad. and Randolph-Macon Col. Grad. M. D. Univ. Col. Med., Richmond, 1896. Brd. Sept., 1896. Elec. 1897. Present 1898. Mem. Med. Soc. of Newport News.

Warriner, Wm. Thomas, Crewe, Nottoway Co., Va.—4.
Grad. M. D. Col. Phys. and Surg., Balto., 1872. Elec. 1894.

Washington, Henry Wallace Macrae, North, Mathews Co., Va. Res. Hon. Mem.—1.
B. Fortress Monroe Dec. 9, 1835. Educ. Wm. and Mary Col., Dickinson Col., Pa., and Warren Green Acad., Va. Grad. M. D. Jeff. Med. Col., Phila., 1855. Elec. 1899. Hon. Mem. 1906. Asst. Surg. U. S. Navy 1856-61; Surg. C. S. Ironclad "Arkansas," Vicksburg, July 15, 1862. Surg. C. S. Ironclad "Fredericksburg," 1863-5. Jas. River Squad. 1864, and C. S. N., Danville, 1865.

Watson, Edmund Chitwood, Roanoke, Roanoke Co., Va.—6.
B. Hillsville, Va., June 24, 1875. Educ. Wood Lawn Nor. Inst. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec. 1900. Mem. Roanoke Med. Soc. Phy. and Surg. Va. Iron, Coal and Coke Co., Roanoke. Papers, Puerperal Fever, Roanoke Med. Soc., **July, 1900.**

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Watts, Stephen Hurt, University, Albemarle Co., Va.—7.
B. Lynchburg, Va., Aug. 6, 1877. A. M. Randolph-Macon Col. Grad. M. D. Johns Hopkins Univ. 1901. Brd. Dec., 1907. Elec. 1908. Mem. S. Surg. and Gyn. Assn.; Tri-St. Med. Soc.; Prof. Surg. and Gyn. Univ. Va.; Direc. Univ. Va. Hosp.

Waugh, Edward A., Lynchburg, Campbell Co., Va.—6.
Grad. M. D. Univ. of Va. 1885. Elec. 1901.

Wayland, Albert Bledsoe, Crozet, Albemarle Co., Va.—7.
B. Covesville, Va., Nov. 4, 1875. Educ. Fishburne Mil. Sch. and Univ. Va. Grad. M. D. Univ. of Va. 1897. Brd. July, 1898. Elec. 1899. Present 1900, 1, 3, 4, 6. Post-Grad. Course N. Y. Post-Grad. Sch.; also Good Samar. Hosp. and Infants' Asy., N. Y. Mem. Pied. Med. Soc.; of Am. Med. Assn.; of Phi. Gamma Delta Frat. Ex. Equit., N. Y., Trav., Mut. Ben., N. W. Mut., Penn. Mut., and Mut. L. Ins. Cos.

Weaver, Delmar F., Rochelle, Madison Co., Va.—7.
B. Gordonsville, Va., March 12, 1872. Educ. Locust Dale Acad. Grad. M. D. Med. Col. Va. 1894. Brd. 1894. Elec. 1899. Present 1899. Mem. Pied. Med. Soc.

Weaver, Zeno Leonidas, Middletown, Frederick Co., Va.—7.
B. Hood, Va., April 21, 1876. Educ. Warwick H. Sch., Madison, Va. Grad. M. D. Med. Col. Va. 1900. Brd. 1900. Elec. 1905. Mem. Winchester Med. Soc. Surg. B. & O. Ry.

Webb, Charles Shepherd, Bowling Green, Caroline Co., Va.—1.
B. Richmond Co., Va. Educ. Farnham Inst., Va., and Ph. B. Baylor Univ., Tex. Stud. Med. Univ. of Va. 1873-4. Grad. M. D. Univ. City of N. Y. 1875. Elec. 1905. Present 1905-6-7-8. Prof. Math. and Eng. Lit., Baylor Univ. two sess. Prof. Chem. Wash. Sem., Atlanta, Ga., 1891-3, and Prof. Prac. of Med., South. Med. Col., Atlanta, Ga., 1892-6. Pub. addresses on Med., Educ. and other subs., numerous.

Webb, Frederic Bostock, Roanoke, Roanoke Co., Va.—6.
B. Birkenhead, England, Dec. 3, 1866. Educ. Repton Sch., England. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. 1901. Elec. 1903. Mem. Roanoke Med. Soc. Solicitor Sup. Court of Judicature, Eng.; enrolled 1888. Hlth. Offi. Roanoke 1903.

Webb. William C. Burrowsville, Prince George Co., Va.—4.
B. Pr. George C. H., Va., May 6, 1879. Educ. Wm. and Mary Col. Grad. M. D. Univ. Md. 1904. Brd. June, 1904. Elec. 1904.

Weisiger, Carter, Cumberland C. H., Va.—10.
B. Richmond, Va., July 22, 1875. Grad. M. D. Univ. Col. Med., Richmond, 1896. Brd. June, 1896. Elec. 1896. Present 1898, 9. Surg. F. & P. R. R.

Welburn, Williamson Crothers, Ballston, Alexandria Co., Va.—8.
B. Nashville, Tenn., Oct. 5, 1874. Educ. Lit. Dept. Vanderbilt Univ. Grad. M. D. Vanderbilt Univ. Med. Dept., 1899. Brd. Dec., 1905. Elec. 1906. Mem. Am. Med. Assn.; of Fairfax and Alex. Co. Med. Socs.; of Med. Soc. of Northern Va. Late Lect. Histol., Phys. Diag. and Dem. of Micros.; Phys. to Dis. of Vander. Univ. Papers: Clin. Manifestations of Grippe, 1900; Gastroptosis, 1901; Glycosuria, 1902.

Wellford, Armistead L., Richmond, Henrico Co., Va.—3.
B. Richmond, Va., July 8, 1857. Educ. Univ. Va. Grad. M. D. Med. Col. Va. 1880, and Univ. City N. Y. 1882. Elec. 1887. Present 1887, 1894, 1908. Adj. Prof. Dis. Women and Children, Med. Col. Va.

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Wellford, John Spottswood, Richmond, Henrico Co., Va. Res. Hon. Mem. Founder.—3.
Charter Mem. 1870. Vice-Pres. 1870. Hon. Mem. 1897. Emer. Prof. Dis. of Women and Children, Med. Col. Va. Surg. C. S. A. Ex-Pres. Richmond Acad. Med. and Surg.

West, Nelson G., Leesburg, Loudoun Co., Va. Res. Hon. Mem.—8.
Elec. 1881. Hon. Mem. 1906.

West, Thomas P., Bedford City, Bedford Co., Va.—6.
B. Bellevue, Va., Feb. 19, 1874. Educ. Bellevue H. Sch. Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1899. Mem. Al. Soc. Med. Col. Va. Res. Phys. Old Dom. Hosp., Richmond. Surg. N. & W. R. R.

West, William Johnson, Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1893. Brd. April, 1893. Elec. 1904.

Weymouth, Samuel Enoch, Callao, Northumberland Co., Va.—1.
Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. 1901. Elec. 1904.

Wheat, John R., Richmond, Henrico Co., Va.—3.
Elec. 1878.

White, Benjamin Robert, Strasburg, Shenandoah Co., Va.—7.
Grad. M. D. Univ. of Md. 1896. Brd. June, 1896. Elec. 1907.

White, Carl C., Mathews, Mathews Co., Va.—1.
B. Mathews Co., Va., Jan. 22, 1868. Grad. M. D. Balto. Med. Col. 1897. Brd. June, 1897. Elec. 1899.

White, George D., Cave Spring, Roanoke Co., Va.—6.
Grad. M. D. Col. Phy. and Surg., Balto., 1881. Elec. 1904.

White, Harry Fitzhugh, Fishersville, Augusta Co., Va.—10.
B. Staunton, Va. Educ. Chester Springs Acad. Grad. M. D. Univ. Col. Med., Richmond, 1908. Brd. June, 1908. Elec. 1908. Present 1908. Surg. City (Richmond) Home Hosp. 1908.

White, James L., Farmville, Prince Edward Co., Va. Res. Hon. Mem.—4.
B. Abingdon, Va., 1833. Educ. Va. Mil. Inst., Univ. Va. Grad. M. D. Jeff. Med. Col. 1855. Elec. 1873. Hon. Mem. 1906. Present 1874, 5, 1881. V.-Pres. 1875. Surg. C. S. A. 1861-5.

White, Joseph Augustus, Richmond, Henrico Co., Va.—3.
B. Balto., Md., April 19, 1848. A. M. Mt. St. Mary's Col., Md. Grad. M. D. Univ. Md. 1869. Elec. Mem. 1879. Att. Sess. 1879-1908, inc. V.-Pres. 1882. Mem. Am. Med. Assn.; of Am. Oph. Soc.; of Rich. Acad. Med. and Surg. Post-Grad. Eye, Ear and Throat Dis., N. Y., London, Paris, Heidelberg, Berlin. Founded Rd. Eye, Ear and Throat Inf., 1880. Prof. Dis. Eye, U. C. M.

White, Joshua Warren, Norfolk, Norfolk Co., Va.—2.
B. Charlotte Co., Va. Educ. Va. Poly. Inst., and B. A. of Hampden-Sidney Col. Grad. M. D. Med. Col. Va. 1901. Brd. Dec., 1901. Elec. 1905. Present 1905. Mem. Norfolk Med. Soc.

White, Reid, Lexington, Rockbridge Co., Va.—10.
B. Lexington, Va., March 28, 1868. Educ. Washington Univ. Grad. M. D. Univ. of Pa., Med. Dept., 1892. Brd. Sept., 1892. Elec. 1896. Surg. Va. Mil. Inst.

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White, Rooker John, Keller, Accomac Co., Va.—1.
B. Somerset Co., Md., May 17, 1879. Educ. Roanoke Col. Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. Dec., 1901. Elec. 1904. Present 1901, 2, 3, 4. Mem. Sea. Med. Soc.; of Norfolk Med. Soc.

Whited, Elbert Patton, Hurley, Buchanan Co., Va.—9.
B. Rosedale, Russell Co., Va., 1872. Educ. Logan H. Sch., W. Va. Grad. M. D. Med. Col. Va. 1903. Brd. June, 1905. Elec. 1905. Mem. Russell Co. Med. Soc.

Whitehead, Richard Henry, University, Albemarle Co., Va.—7.
B. Salisbury, N. C., July 27, 1865. A. B. Wake Forest Col., N. C. Grad. M. D. Univ. Va. 1887. Brd. Dec., 1905. Elec. 1906. Present 1906-7-8. Mem. Am. Med. Assn.; Am. Assn. for Adv. of Sci.; of Assn. of Am. Anat. Prof. Anat. and Dean Med. Dept. Univ. Va. 1905-9.

Whitehead, Robert Camden, Amherst, Amherst Co., Va.—10.
Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1906.

Whitehead, Robert Edward, R. F. D. 2, Norfolk, Norfolk Co., Va. (But lives at Kempsville, Princess Anne Co.)—2.
B. Prin. Anne Co., Va., June 28, 1873. Educ. Wm. and Mary Col., Williamsburg, Va. Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1897. Att. Sess. two.

Whitman, William Rush, Bramwell, Mercer Co., W. Va.
B. Pulaski, Va., Sept. 25, 1875. A. B. Roanoke Col. Grad. M. D. Col. P. and S., Columbia Univ., N. Y., 1901. Brd. June, 1901. Elec. 1901. Interne Gouveneur Hosp., N. Y., 1901-2.

Whitmore, Walter S., Mount Sidney, Augusta Co., Va.—10.
B. Mt. Sidney, Va., Oct. 14, 1873. Educ. Augusta Mil. Acad. and Univ. of Va. Grad. M. D. Univ. Va. 1901. Brd. June, 1901. Elec. 1904. Mem. Augusta Co. Med. Soc. Res. Phy. St. Vincent's Hosp., Norfolk, Va., 1901-3.

Wiggs, Leslie Byron, Richmond, Henrico Co., Va.—3.
B. Kingston, N. C. Educ. Tilerton Inst. Grad. M. D. Med. Col. Va. 1907. Brd. Dec., 1907. Elec. 1908. Mem. Richmond Acad. Med. and Surg. Adj. Prof. Surg. and Dem. Phy. and Anat. Med. Col. Va. Att. Surg. City Free Dis. Papers: Alcohol, 1907; Syphilis of Bone and Joints, 1908.

Wiley, Garland Somers, Roanoke, Roanoke Co., Va.—6.
B. Emory, Va., Sept. 1, 1879. B. A. Emory and Henry Col. Grad. M. D. Univ. Va. 1903. Brd. Dec., 1903. Elec. 1906. Mem. (and 1st V.-Pres.) Wise Co. Med. Soc.; of S. W. Va. Med. Soc.

Wiley, George E., Bristol, Washington Co., Va.—9.
Grad. M. D. Univ. of Md. 1875. Elec. 1884. Surg. Mathieson Alkali Co.

Wiley, Robert Minor, Salem, Roanoke Co., Va.—6.
B. Sinking Creek, Craig Co., Va., Nov. 8, 1870. A. B. Roanoke Col. Grad. M. D. Med. Col. Va. 1895. Brd. May, 1895. Elec. 1895. Present 1895. Mem. Sigma Chi Col. Frat.

Wiley, R. S., Iron Gate, Alleghany Co., Va.—10.
Grad. M. D. Univ. of Md., 1873. Elec. 1883. Resigned 1893. Re-elected 1894.

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Wilkins, Robert Lee, Alexandria, Alexandria Co., Va.—8.
B. Sudly Mills, Pr. William Co., Va., 1866. Educ. Alexandria H. Sch. Grad. M. D. Univ. Va. 1901. Brd. 1903. Elec. 1904. Mem. Alex. Co. Med. Soc. Med. Ex. Order of Ry. Conductors, So. Ry. and K. of Mac.

Wilkins, Thomas Henry, Portsmouth, Norfolk Co., Va.—2.
B. Portsmouth, Va., Aug. 13, 1877. Educ. Portsmouth Sch. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. June, 1900. Elec. 1902. Mem. Portsmouth and Norfolk Med. Socs.

Wilkinson, William W., La Crosse, Mecklenburg Co., Va.—4.
B. Lunenburg Co., Va., April 17, 1878. Educ. Randolph-Macon Acad. Grad. M. D. Univ. Col. Med. 1901. Brd. June, 1901. Elec. 1902. Present 1902, 4.

Willcox, Daniel Dodson, Petersburg, Dinwiddie Co., Va.—4.
Grad. M. D. Univ. Col. Med., Richmond, 1901. Brd. June, 1901. Elec. 1904.

Williams, Ennion G., Richmond, Henrico Co., Va.—3.
B. Richmond, Va., Jan. 31, 1874. Educ. Univ. of Va. Grad. M. D. Univ. of Va. 1897. Brd. June, 1897. Elec. 1900. Present 1900, 3, 4-8. Mem. Richmond Acad. Med. and Surg.; of So. Surg. and Gyn. Assn.; of Am. Med. Assn.; of Am. Roentgen Ray Soc.; House of Del. Am. Med. Assn. 1902. State Hlth. Commis. 1908-9. Post-Grad. N. O. Poly., Univ. of Pa., Johns Hopkins, Harvard, and Univ. Munich.

Williams, Frank E., Ivy, Albemarle Co., Va.—7.
Grad. M. D. Med. Col. Va. 1884. Elec. 1891.

Williams, George Julius, Newport News, Warwick Co., Va.—1.
B. Tazewell Co., Va., Sept. 26, 1869. Educ. H. Sch. Grad. M. D. Med. Col. Va. 1898. Brd. June, 1897. Elec. 1898. Att. sess. four. Mason. Hon. Mem. Va. State Fireman's Assn.; Asso. Mem. and Ex-Pres. N. N. Med. Soc.; Del. Brit. Med. Assn., Toronto, Aug., 1906. Att. Clin. N. Y. Poly 1907.

Williams, Hazael, Springwood, Botetourt Co., Va.—10.
Grad. M. D. Col. Phys. and Surg., Balto., 1882. Elec. 1890.

Williams, James Fulton, Charlottesville, Albemarle Co., Va.—7.
B. Avon, Va., Jan. 19, 1873. Educ. Waynesboro, Va. Grad. M. D. Balto. Univ. 1899. Brd. Dec., 1901. Elec. 1902.

Williams, James Porter, Princeton, Mercer Co., W. Va.
B. Pearisburg, Va., Feb. 21, 1873. Educ. Pearisburg Male and Female Acad. Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. June, 1897. Elec. 1901. Mem. Local Brd. of Hlth.

Williams, John Mason, Disputanta, Prince George Co., Va.—4.
B. Newville, Va., April 1, 1881. Educ. Newville Gra. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1904. Mem. Wise Co. Med. Assn.

Williams, John Mettauer, Rocky Mount, Franklin Co., Va.—5.
Grad. M. D. Univ. of Pa. 1874. Elec. 1904.

Williams, John W., Richmond, Henrico Co., Va.—3.
Grad. M. D. Med. Col. Va. 1864. Elec. 1887.

Williams, J. Richard, Richmond, Henrico Co., Va.—3.
B. Henrico Co., Va., Dec. 5, 1875. Educ. Richmond Col. Grad. M. D. Med. Col. Va. April, 1898. Brd. June, 1898. Elec. 1898. Present

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1899, 1908. Mem. Soc. Al. Med. Col. Va.; of Richmond Acad. Med. and Surg. Instr. Prin. and Prac. of Surg. Med. Col. Va. Att. Surg. City Free Disp. of same.

Williams, Robert F., Catawba Sanat., Salem, Roanoke Co., Va.
B. Richmond, Va., May 23, 1869. B. Ph. and M. A. Univ. Va. Grad. M. D. Univ. Va. 1892. Brd. Sept., 1895. Elec. 1895. Present 1897. On Prize Essay Com. 1897. Mem. Am. Med. Assn. Phy. in charge Catawba Sanat. 1909.

Williams, Roy F., Riner, Montgomery Co., Va.—6.
Grad. M. D. Univ. Col. Med., Richmond, 1905. Brd. June, 1905. Elec. 1908.

Williams, Walter L., Brookneal, Campbell Co., Va.—6.
B. Mt. Zion, Campbell Co., Va., July 11, 1862. Grad. M. D. Med. Col. Va. 1885. Brd. 1885. Elec. 1888. Med. Ex. for many L. Ins. Cos. Papers, Cholera Infantum; Unique Case of Obstetrics, etc. Mem. Co. Brd. of Hlth.

Williams, Will Reese, Richlands, Tazewell Co., Va.—9.
B. Pounding Mill, Va., 1873. Educ. Wm. and Mary Col. Grad. M. D. Med. Col. Va. 1897. Brd. June, 1897. Elec. 1897. Att. Sess. one.

Willis, Achille Murat, Richmond, Henrico Co., Va.—3.
B. Greene Co., Ala., Dec. 10, 1878. Educ. Woodbury Forest. Grad. M. D. Med. Col. Va. 1904. Brd. June, 1905. Elec. 1905. Mem. Richmond Acad. Med. and Surg.

Willis, F. Delaplaine, Newport News, Warwick Co., Va.—1.
B. Talbot Co., Md., March 12, 1874. Educ. Easton Acad., Md. Grad. M. D. Univ. of Md. 1897. Brd. 1898. Elec. 1902. Mem. (and Pres. 1902-3) Newport News Med. Soc.; of Sea. Med. Soc. Practice limited to Dis. of Eye, Ear, Nose and Throat.

Willis, Hillary Thomas, Hyattsville, Prince George Co., Md.
B. Rapidan, Va., 1874. Educ. Locust Dale Acad. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. 1898. Elec. 1900.

Wills, Alex. F., R. F. D., New Glasgow, Amherst Co., Va. Res. Hon. Mem.—10.
B. Nelson Co., Va., Oct. 3, 1833. Educ. Hanover Acad. and Pied. Acad. Grad. M. D. Jeff. Med. Col., Phila., 1857. Elec. 1871. Hon. Mem. 1906. Act. Asst. Surg. Emory and Henry Col. 18 mos. Asst. Surg. 1st Va. Cav. Vol. Act. Surg. 62d Reg. Mounted Inf. 1864.

Wilson, Albert Edwards, Norfolk, Norfolk Co., Va.—2.
B. Surry Co., Va., June 23, 1868. Educ. Norfolk, Va. Grad. M. D. Md. Univ., Balto., 1896. Brd. June, 1896. Elec. 1902. Mem. Sea. Med. Assn.; of Norfolk Acad. of Med. Post-Grad. Presby. Eye, Ear and Throat Hosp., Balto. Prac. limited to above dis.

Wilson, Arthur Lee, Lynchburg, Campbell Co., Va.—6.
B. Washington, D. C., Nov. 16, 1874. A. B. Columbia Univ. 1894. Grad. M. D. Bellevue Hosp. Med. Col. 1897. Brd. Nov., 1899 Elec. 1900.

Wilson, Nicholas George, South Norfolk, Norfolk Co., Va.—2.
B. Norfolk Co., Va., Sept. 13, 1871. Educ. Hemenway Sch., Norfolk. Grad. M. D. Univ. of Md. 1895. Brd. May, 1895. Elec. 1905. Present 1905. Mem. Norfolk Med. Soc.; of Sea. Med. Assn.

Wilson, W. A., Radford, Montgomery Co., Va.—6.
Elec. 1875. Reinstated 1905.

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Wilson, William, Byrdville, Pittsylvania Co., Va.—5.
B. Byrdville, Va., May 25, 1881. Educ. Va. Poly. Inst. Grad. M. D. Med. Col. Va. 1907. Brd. June, 1907. Elec. 1908. Grad. Soc. of Lying-in-Hosp., N. Y. City.

Wimbish, William Townes, Clarksville, Mecklenburg Co., Va.—4.
B. Cuscowilla, Va., 1875. Grad. M. D. Univ. Va. 1896. Brd. Sept., 1896. Elec. 1902. Mem. Sea. Med. Assn.

Wine, Robert Eugene, Brentsville, Prince William Co., Va.—8.
B. Quicksburg, Shenandoah Co., Va. Educ. Free Schools and W. Central Acad., Mt. Clinton, Va. Grad. M. D. Univ. of South 1899. Brd. Nov., 1899. Elec. 1905. Mem. Med. Soc. of Northern Va.; Ex-V.-Pres. Hampshire (W. Va.) Co. Med. Soc. Med. Ex. N. Y., Mut. L. Ins. Cos. Mem. Pr. Wm. Co. Brd. Hlth. Papers: Diphtheria Antitoxin, Use. Report of Cases, Hampshire Co. Med. Soc.

Winfield, J. Buckner, Johnstown, Harrisonburg Co., W. Va.
Grad. M. D. Univ. Col. Med., Richmond, 1897. Brd. 1898. Elec. 1899.

Winfrey, Joseph H., Glen Allen, Henrico Co., Va.—3.
B. Buckingham Co., Va., Jan. 31, 1872. Educ. Pub. Sch. Grad. M. D. Univ. Col. Med., Richmond, May, 1899. Brd. June, 1899. Elec. 1900. Present 1900, 1, 4, 6, 8.

Wingfield, Charles L., Warren, Albemarle Co., Va.—7.
Grad. M. D. Univ. of Pa. 1848. Elec. 1895.

Winn, John F., Richmond, Henrico Co., Va.—3.
B. Fluvanna Co., Va. Educ. Prep. Schs. and Univ. Va. Grad. M. D. Univ. Va. 1875. Elec. 1877. Present 1878, 1882, 5, 6, 7, 8, 9, 1890, 1, 2, 4, 9, 1901, 8. Cor. Sec. 1885-1908. Post-Grad. Phila. Lying-in Hosp. and Jeff. Med. Col. 1879-80; N. Y. Poly. 1890; Phila. Poly. 1893. Prof. Clin. Obst. Univ. Col. Med.; Obst. Va. Hosp.; Mem. Rd. Acad. Med. and Surg. Founder and Ed. Rd. Jour. Prac.

Winston, John Woolfolk, Norfolk, Norfolk Co., Va.—2.
B. Texas 1879. Grad. M. D. Univ. Va. 1903. Brd. June 1903. Elec. 1908. Present 1908. Mem. Norfolk Med. Soc.

Winston, Peter, Farmville, Prince Edward Co., Va.—4.
Grad. M. D. Univ. Med. Col., N. Y., 1860. Elec. 1893.

Wiseman, Henry A., Danville, Pittsylvania Co., Va.—5.
Grad. M. D. Univ. of Va. 1901. Brd. June, 1901. Elec. 1904.

Withers, Walter W., Roseland, Nelson Co., Va.—10.
Grad. M. D. Med. Col. Va. 1862. Elec. 1901.

Witten, J. Walter, North Tazewell, Tazewell Co., Va.—9.
B. Tazewell, Va., 1880. Grad. Tazewell Col. Grad. M. D. Med. Col. Va. 1905. Brd. June, 1905. Elec. 1907. Interne City (Richmond) Home, and Amb. Surg., 1905-6. Asst. Surg. Pocahontas Hosp., Jamestown Expo. Papers: Report of Case of "Milk Sickness," Case of Chronic Internal Hydrocephalus, 1906.

Witten, Rawley Martin, Graham, Tazewell Co., Va.—9.
B. Tazewell C. H., Va., 1853. Grad. M. D. Col. Phys. and Surg., Balto., Md., 1880. Elec. 1901.

Witten, Thomas G., Tazewell, Tazewell Co., Va.—9.
B. Tazewell Co., Va., March 19, 1822. Educ. Emory and Henry Col. Grad. M. D. Univ. of Pa. 1851. Elec. 1901.

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Wolfe, Alfred L., Roanoke, Roanoke Co., Va.—6.
B. Rockingham Co., Va., Dec. 26, 1853. Educ. Pub. Sch. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1875. Elec. 1903. Asst. Surg. N. & W. Ry. from 1880 till moved to Roanoke. Exam. several Ins. Cos. Mem. Roanoke Med. Soc. Papers, Nervous Phenomena Accompanying and as Sequelae to Grippe, 1901; Auto-Infection, Some of its Principal Manifestations, 1902.

Wolfe, Jr., Joseph Bishop, Coeburn, Wise Co., Va.—9.
B. Wolfe Co., Ky., March 7, 1869. Grad. M. D. Louisville Med. Col. 1891. Brd. June, 1902. Elec. 1902. Mem. Wise Co. Med. Soc.

Wolfe, Preston E, R. F. D. 3, Glade Spring, Washington Co., Va.—9.
B. Adwolf, Va., Aug. 19, 1863. Educ. Holstein Mills Acad., Va. Grad. M. D. Univ. City N. Y. 1890. Brd. April, 1890. Elec. 1890. Attend. Sess. one.

Womack, John Hobson, Spring Garden, Pittsylvania Co., Va.—5.
B. Nyle, Pittsylvania Co., Va., May, 1869. Grad. M. D. Univ. Col. Med., Richmond, 1900. Brd. Dec., 1901. Elec. 1903. Mem. Pittsylvania Co. Med. Soc.

Wood, Amos DeRussia, Bluefield, Mercer Co., W. Va.
B. Turtle Rock, Floyd Co., Va., May 16, 1869. Educ. Floyd, Va. Grad. M. D. Col. Phys. and Surg., Balto., Md., 1893. Brd. April, 1893. Elec. 1895.

Wood, George B., Emporia, Greenesville Co., Va.—4.
B. Northampton Co., N. C., Jan. 28, 1858. Educ. Woodlands Acad. Grad. M. D. Col. Phys. and Surg., Balto., 1889. Pract. prior to 1885. Elec. 1890. Mem. Sea. Med. Assn. Licensed Phar.

Wooding, Nathaniel H., Chalk Level, Pittsylvania Co., Va.—5.
Grad. M. D. Jeff. Med. Col., Pa., 1857. Elec. 1885.

Woodson, George Chambers, Richmond, Henrico Co., Va.—3.
B. Buckingham Co., Va., Feb. 23, 1885. Educ. Rd. H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1907. Brd. Dec., 1907. Elec. 1908. Present 1908. Mem. Rd. Acad. Med. and Surg.; Churchill Med. Soc.; Path. and Asso. Phy. to Chimborazo Sanat., and Rd. Tuberculosis Inst.

Woodward, John Franklin, Norfolk, Norfolk Co., Va.—2.
B. Pr. George Co., Va., July 19, 1866. Educ. Randolph-Macon Col. Grad. M. D. Med. Col. Va. 1890. Brd. spring, 1890. Elec. 1890. Present 1890, L. 4, 1902, 8. Mem. Norfolk Med. Soc.; Am. Rhino-Laryn. and Otol Soc.; Am. Med. Assn.; Sea. Med. Soc.; Tri-State Med. Assn. Lect. Nerv. Dis. and Adj. Prof. Hyg. and Skin Dis. Univ. Col. Med. 1893. Adj. Prof. Eye, Ear and Throat Dis., 1894-6.

Woolfolk, Frank S., Louisa, Louisa Co., Va.—8.
Grad. M. D. Washington Univ., Md., 1877. Elec. 1904.

Woolling, Richard Henry, Pulaski, Pulaski Co., Va.—9.
Grad. M. D. Univ. Col. Med., Richmond, April, 1896. Brd. June, 1896. Elec. 1896. Res. Phys. Va. Hosp. 1896.

Woolwine, Andrew Bane, Ceres, Bland Co., Va.—9.
B. Pearisburg, Va., May 3, 1874. Educ. Pearisburg Acad. Grad. M. D. Univ. Col. Med. 1897. Brd. July, 1897. Elec. 1902.

Woolwine, William David, Pearisburg, Giles Co., Va.—9.
B. Pearisburg, Va., March 22, 1876. Grad. M. D. Univ. Col. Med., Richmond, April, 1897. Brd. June, 1897. Elec. 1900.

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Worthington, D. H., Hampton, Elizabeth City Co., Va.—1.
B. Iowa City, Iowa, March 11, 1851. B. S. DePano Univ. 1877. Grad. M. D. Rush Med. Col. 1879. Brd. Sept., 1892. Elec. 1892. Present 1892. Mem. Am. Med. Assn., Nat. Assn. Ry. Surg., Iowa State Med. Soc. Surg. C. R. T. and P. and C. B. and Q. R. R. Pres. Brd. Ex. Surg. for Pens., Fairfield, Iowa.

Wright, Fletcher Johnston, Fork Union, Fluvanna Co., Va.—10.
B. Pullens, Va., Feb. 10, 1873. Educ. Pub. and Priv. Schs. Grad. M. D. Univ. Col. Med., Richmond, 1899. Brd. June, 1899. Elec. 1899. Present 1899, 1908.

Wright, George A., Broadford, Smyth Co., Va.—9.
B. Poplar Hill, Va., Sept. 11, 1881. Educ. Roanoke Col. Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1904. Res. Phy. Home for Incurables, Richmond, Va., 1903-4, and Va. Hosp. 1904-5. Med. Ex. two L. Ins. Cos.

Wright, John Alexander, Doswell, Hanover Co., Va.—3.
B. Lynchburg, Va., Aug. 9, 1876. Educ. Lynchburg H. Sch. Grad. M. D. Univ. Col. Med., Richmond, 1898. Brd. June, 1898. Elec. 1898. Res. Phys. Va. Hosp. 1898-9. Mem. Rappahannock Val. Med. Assn. Papers, Report of Two Peculiar Cases, 1900.

Wright, John Frederick, Keezletown, Rockingham Co., Va.—7.
B. Augusta Co., Va., Oct. 26, 1852. Educ. Roanoke Col. Grad. M. D. Col. Phys. and Surg., Balto., 1876. Elec. 1888.

Wright, Otho Clement, Jarratt, Sussex Co., Va.—4.
B. Pullens, Pittsylvania Co., Va., Sept. 29, 1867. Educ. Pub. and Priv. Schls. and Va. Agric. and Mech. Col., Blacksburg, Va. Grad. M. D. Col. P. and S., Balto., 1893. Brd. April, 1893. Elec. Oct., 1893. Present 1893, 1908. Mem. Med. Ex. Brd. Va. from 4th Dist.

Wright, Robert Herbert, Richmond, Henrico Co., Va.—3.
B. Petersburg, Va., May 16, 1879. Educ. Univ. of Va. Grad. M. D. Univ. of Va. 1900. Brd. June, 1900. Elec. 1906. Present 1906, 8. Mem. Richmond Acad. Med. and Surg. Papers for Soc., Operative Treatment of Deviated Nasal Septa, 1906.

Wyatt, Gislonza L., White Sulphur Springs, W. Va.
B. Rip Raps, Va., Jan. 20, 1879. Educ. Wm. and Mary Col. Grad. M. D. Col. Phy. and Surg., Balto., Md., 1903. Brd. June, 1904. Elec. 1905. Present 1905. Mem. Am. Med. Assn.; W. Va. Med. Assn.

Wysor, John Chandler, Clifton Forge, Alleghany Co., Va.—10.
B. Pulaski Co., Va., May 12, 1854. Grad. M. D. Col. Phys. and Surg., Balto., 1878. Brd. June, 1898. Elec. 1898. Surg.-in-charge C. & O. Hosp., Clifton Forge, Va.

Yancey, Layton Berbridge, McGaheysville, Rockingham Co., Va.—7.
B. Rockingham Co., Va., Jan. 27, 1851. Educ. Emory and Henry Col. Studied Med. Univ. Va., 1871-2. Grad. M. D. Washington Univ., Balto., 1873. Elec. 1883. Att. Sess. nine.

Young, John H., Burkeville, Nottoway Co., Va.—4.
Grad. M. D. South. Med. Col., Atlanta, 1882. Elec. 1891.

Young, Rush Floyd, R. F. D. 2, Chilhowie, Smyth Co., Va.—9.
B. Grayson Co., Va., 1855. Stud. Med. Univ. Va. 1875. Grad. M. D. Univ. City N. Y. 1876. Elec. 1885. Present 1885, 7, 8, 9, 1890, 1, 2. Mem. Med. Ex. Brd. Va.

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Young, Staley E., Baywood, Grayson Co., Va.—5.
B. Grant, Va., 1862. Educ. Asbury and Oak Hill Acads. Grad. M. D. Balto. Med. Col. 1893. Brd. Sept., 1898. Elec. 1902. Med. Ex. N. Y. Mut. and Home L. Ins. Cos.

Younger, Edward Franklin, Lynchburg, Campbell Co., Va.—6.
B. Campbell Co., Va., 1882. Grad. M. D. Univ. Col. Med., Richmond, 1904. Brd. June, 1904. Elec. 1904. Mem. Wise Co. Med. Soc

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